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REPORT OF THE PROCEEDINGS

OF THE

Twentieth Annual Convention

OF THE

MASTER CAR-BUILDERS' ASSOCIATION,

HELD AT

NIAGARA FALLS, N. Y.,

June 8th, 9th and 10th,

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REPORT OF THE PROCEEDINGS

OF THE

TWENTIETH ANNUAL CONVENTION

OF THE

MASTER CAR-BUILDERS' ASSOCIATION,

HELD AT

THE INTERNATIONAL HOTEL, NIAGARA FALLS,

June 8th, 9th and 10th, 1886.

The Convention was called to order at 10.15 A. M. by the President, Mr. B. K. Verbryck.

The Secretary then called the roll. The following members answered to their names: J. T. Chamberlain, George W. Demarest, T. G. Duncan, L. Finley, John B. Fletcher, Leander Garey, George Hackett, John Hodge, B. McDevitt, D. B. Peabody, H. M. Perry, John Sweeney, W. G. Van Buskirk, R. W. Bushnell, John W. Cloud, Allen Cooke, William Forsyth, Robert Hitchcock, Sanford Keeler, John S. Lentz, J. W. Marden, James McGee, J. D. McIlwain, R. McKenna, Robert Miller, C. W. Mills, Godfrey W. Rhodes, W. B. Snow, R. H. Soule, H. D. Titus, W. F. Turreff, B. K. Verbryck, E. B. Wall, B. Warren, Joseph Wood, M. N. Forney.

THE PRESIDENT—The next thing in order will be the reading of the minutes of the last meeting.

MR. DEMAREST—As the minutes are printed I move that the reading be dispensed with.

Agreed to.

The President then addressed the Convention as follows:

Gentlemen of the Master Car-Builders' Association:

I have the pleasure of greeting you on this the Twentieth Annual Convention of our Association. Nearly a fifth of a century has elapsed since about forty Master Car-Builders held a meeting at Springfield, Mass., and organized the Master Car-Builders', or, as it was then called, the National Car-Masters' Association. Previous to that date informal meetings had been held at West Albany, New York, and Adrian, Mich., of which there are no records in existence. But the first general convention was held at Springfield, Mass., Wednesday, May 15, 1867. At that meeting a committee was appointed to take into consideration the propriety of forming a Master Car-Builders' Association, and the committee was directed to report a Constitution and By-laws at an adjourned meeting to be held at Altoona, Pa., September 18, 1867. At the time appointed the meeting was held and the Constitution and By-laws were adopted. It is not my intention to go into a history of the Association from that date to this, the Twentieth Annual Convention, but to call to remembrance the important results accomplished from the organization of the Association. Though the results accomplished have fallen far short of what we could have wished in the matter of uniformity, still a great deal has been done towards the objects for which the Association was organized. If nothing else had been accomplished except the interchange of ideas between the members of the Association, I think it will be conceded that even that would have richly repaid us for the trouble of meeting together once a year and getting acquainted and forming friendships that will last as long as we live. But that is not all that has been accomplished. We have from very small beginnings and very little influence gradually arrived at a stage where there are very few of our general managers who do not recognize the importance of our Association, as can be seen by the fact that nearly half a million cars were represented by our representative members at last year's convention. I hope at this meeting greater progress will be made toward getting standard forms and appliances for freight cars. We all realize the great importance of this subject, and as the interchange of freight cars becomes greater every year, the task becomes more and more difficult the longer we

put it off. I myself feel that it would be very desirable if a standard truck and castings for cars could be adopted. I would be glad to adopt them, to save making so many patterns, and in some cases sending long distances for castings to repair cars broken on our road, and which are kept waiting in repair yards often weeks before the material ordered to repair them is received. The question of automatic brakes for freight cars has become one of great importance, and we had hoped to arrive at some conclusion before our meeting this year, but circumstances have made it impossible at this time. I am glad to state, however, that the committee having this subject in charge have made arrangements for a test that will, we hope, arrive at some definite conclusion before our next annual convention. As this is a very important matter, perhaps it is best that we do not proceed too hastily, and that the delay will be for the best, so that no mistake is made.

In accordance with a resolution passed at our last annual convention, referring the subject of automatic freight-car couplers to the Executive Committee, with power to arrange for and conduct a public trial at some central point, the committee invited inventors of couplers to a trial at Buffalo, New York, September 15, 1885. Accordingly, at that date a trial was made of between forty and fifty different kinds, and twelve of the number were selected and recommended for further trial, a report of which will be submitted to the Association by the Executive Committee.

The separate organization having in charge the rules of interchange that met at one session of our convention every year for their revision, was merged into the Master Car-Builders' Association at our last annual meeting, and a committee appointed to revise and codify the rules and submit them to the Executive Committee before the next annual meeting of the Association. The work of the committee has been reviewed by the Executive Committee, and at the proper time will be submitted to you for your approval or rejection. Whether the rules as amended and codified are approved or not, I think the committee deserve great credit for the amount of time and labor they have expended on them, and I hope they will be given the full consideration they merit.

Since our last annual convention two of our members have been removed by death—Mr. J. G. McCuen, of the Atlantic &

Pacific Railroad, at his home, Albuquerque, New Mexico, November 19, and Mr. H. F. Snyder, of the Pardee Car Works, Watsontown, Pa., November 25, 1885. A committee should be appointed to prepare memoirs of their lives, to be published with the annual report of the Association.

In conclusion, allow me to express the hope that our sessions will be conducted with as much harmony and good feeling as the previous ones have been, and that we may be permitted by a kind Providence to meet many more times at our annual conventions.

A recess of ten minutes was taken to enable those wishing to join the Association to sign the Constitution, after which the President called for the report of the Secretary. Mr. Forney presented that report, which was as follows :

REPORT OF SECRETARY.

The membership of the Association as published in last year's report, consisted of 145 active members, 76 representative members, and 2 associates, or a total of 223 members. Since then the names of 10 active members were taken from the list for non-payment of dues, 5 resigned, 2 died, and 2 were appointed representative members, 2 representatives became active members, and 12 new active members have joined the Association since the last meeting, making a net loss of 5 active members. One representative member was superseded, 4 have been suspended for non-payment of dues, 1 became an active member, and 7 new representatives have been appointed since the last meeting, making a gain of 3 representative members. The membership now stands 140 active members, 79 representatives, and 2 associates, or a total of 221, instead of 199, reported last year.

The number of cars represented in 1884 was 439,305. Last year it was 486,882. What it will be this year cannot be determined until the number represented by each member is reported.

The arrears of dues of members who have resigned, or whose names have been taken from the list for non-payment since the last convention, was $262.50. As will be seen from the list which is presented with this report, there is now due from members whose names are on the list $405. Last year this amount was $707.50. The Secretary hopes that by judicious dunning of members, the unpaid dues may be reduced to a still smaller amount.

The cash collected and expenses incurred by your Secretary during the year have been as follows:

Dues collected from members	$3,190 00
Reports sold	38 20
Cash account over	10 21
Total	$3,238 41

The total amount of expenditures during the year, including your Secretary's salary, was $4,146.71. This included $347.17 for reprinting the early reports of the Association, which was an unusual expense. If this is deducted, it leaves the total expenditures of the Association for the year $3,799.54, which is $561.13 more than the receipts during the year. At the beginning of the year there was a balance in the treasury, so that all the debts of the Association can be paid, and, as your Treasurer will report, there will then be a balance in his hands of about $100.

There will be some increase of revenue to the Association this year, from the addition to its membership; but probably this will not be sufficient to cover the deficit during the coming year, if the same rate of expenditure is continued. The total membership, as already given in this report, is, or was at the time the report was written, 221, and the number of cars represented and reported last year was 439,305. There are therefore about 650 votes in the Association, which, at $5 per vote, will give an annual revenue of $3,250. Counting $50 of income from the sale of annual reports, the income will be about $500 less than the expenses. It is impossible to say how much the addition to the membership or to the number of cars there will be until the convention adjourns. Unless it is greater than there is now reason to anticipate, there will be a deficit at the end of the coming year of a few hundred dollars.

An amendment to the Constitution to permit an increase of the annual assessment, not to exceed $8 per vote, was proposed last year, and will come up for consideration at this meeting. It will be for you to determine what action with reference thereto should be taken. Instead of trying to increase the revenue of the Association, it may seem to some of you that it would be better to reduce its expenses. One way of doing that would be to get a lower-priced Secretary—an expedient which the coming Executive

Committee might do well to entertain. Before they act upon it, though, the present incumbent would like to remind those upon whose shoulders the financial responsibility of the Association will rest next year, that perpetual resistance to the importunities of inventors of car-couplers is worth something, and certainly, if the Association expects its Secretary to act as a buffer between its members and the cranks of all Christendom, it should make some provision for his old age, which, if he continues to act in that capacity, is certain to be premature.

M. N. FORNEY, *Secretary.*

The following is an account in detail of the cash collected and expenses incurred by your Secretary:

JUNE 8, 1886.

M. N. FORNEY, Secretary,

In Account with the Master Car-Builders' Association.

To dues collected from the following members during the year:

1885.		DR.	CR.
	To Balance as per last annual account	$1,779 81	
June	9. J. T. Chamberlain	5 00	
"	9. Milton Wilder	10 00	
"	9. R. H. Briggs	15 00	
"	9. D. W. Hunter	5 00	
"	9. W. O. Smith	10 00	
"	9. W. E. Chamberlain	15 00	
"	9. John Hodge	5 00	
"	9. J. Townsend	5 00	
"	9. J. S. Whitworth	10 00	
"	9. W. H. Day	5 00	
"	9. R. Hitchcock	5 00	
"	9. Geo. Hackett	5 00	
"	9. W. H. Harrison	5 00	
"	9. E. W. Grieves	5 00	
"	9. John M. Kelley	5 00	
"	9. John Voorhees	5 00	
"	9. Henry Schlacks	5 00	
"	9. B. McDevitt	5 00	
"	9. J. B. Fletcher	5 00	
"	9. Wm. Kinyon	5 00	
"	9. F. M. Wallis	5 00	
"	9. L. Finley	5 00	
"	9. E. D. Nelson	5 00	
"	9. Thos. L. McKeon	5 00	

1885.		Dr.	Cr.
June	9. Samuel Irvin	$5 00	
"	9. J. L. Wagner	5 00	
"	10. J. G. McCuen	5 00	
"	10. L. Garey	5 00	
"	10. H. S. Bryan	10 00	
"	10. Osgood Bradley	5 00	
"	10. J. W. Mosier	5 00	
"	10. Geo. Butler	5 00	
"	10. A. Galloway	5 00	
"	10. W. R. Davenport	5 00	
"	10. Thos. H. Bissell	5 00	
"	10. T. G. Duncan	5 00	
"	10. J. P. Coulter	5 00	
"	10. C. Blackwell	5 00	
"	10. H. M. Perry	5 00	
"	10. Frank Sheppard	5 00	
"	11. D. A. Hopkins	5 00	
"	11. H. C. McCarty	5 00	
"	11. G. W. Demarest	5 00	
"	11. H. L. Cooper	5 00	
"	11. W. H. Trainham	5 00	
"	11. S. B. Shoemaker	5 00	
July	6. John Sweeney	5 00	
"	24. N. H. Kohler	125 00	
"	29. Allen Vail	25 00	
"	31. J. H. Raymond	10 00	
Sept.	5. John P. Levan	5 00	
Oct.	22. L. Packard	5 00	
Nov.	18. A. Hegewisch	5 00	
"	18. Wm. Richardson	5 00	
"	19. W. T. Hildrup	5 00	
"	20. J. Taylor Gause	5 00	
"	20. R. Donaby	5 00	
"	21. Wm. McWood	5 00	
"	21. Robert McKenna	125 00	
"	23. Joseph Taylor	5 00	
"	23. Wm. A. Short	5 00	
"	23. M. N. Forney	5 00	
"	25. N. M. George	5 00	
"	25. John P. Levan	5 00	
"	27. H. Stanley Goodwin	125 00	
"	27. R. D. Wade	15 00	
"	27. Sanford Keeler	15 00	
"	27. C. F. Scoville	10 00	
"	27. J. R. Spinner	5 00	
"	28. Robert Miller	65 00	

1885.		Dr.	Cr.
Nov.	28. Allen Cooke	$20 00	
"	28. K. W. Blackwell	5 00	
"	30. Joseph Townsend	30 00	
"	30. Joseph Wood	120 00	
"	30. W. B. Snow	50 00	
"	30. W. F. Turreff	45 00	
"	30. Herbert Wallis	55 00	
"	30. D. McCool	5 00	
"	30. S. W. Murray	5 00	
"	30. Isaac N. Keith	5 00	
Dec.	1. H. S. Huidekoper	10 00	
"	1. John Ortton	5 00	
"	2. Charles Graham	5 00	
"	2. Charles H. Kenison	15 00	
"	2. F. Johnson	10 00	
"	3. H. D. Titus	5 00	
"	3. T. M. R. Talcott	10 00	
"	4. John S. Lentz	5 00	
"	4. J. N. Barr	105 00	
"	4. James McGee	15 00	
"	5. R. W. Bushnell	25 00	
"	5. G. W. Miller	5 00	
"	8. Elias E. Pratt	25 00	
"	12. H. Canham	20 00	
"	12. F. D. Adams	35 00	
"	12. H. L. Preston	30 00	
"	12. Frank J. Hecker	5 00	
"	12. Samuel D. Billings	5 00	
"	12. Job H. Jackson	5 00	
"	12. J. N. Mileham	5 00	
"	12. F. M. Wilder	160 00	
"	14. Geo. C. Watrous	15 00	
"	15. Godfrey W. Rhodes	5 00	
"	16. Geo. Rommel	5 00	
"	18. S. B. Haupt	20 00	
"	19. J. S. McCrum	20 00	
"	21. Godfrey W. Rhodes, C. & I. R. R. Co	5 00	
"	21. Wm. Fuller	40 00	
"	21. Caspar Wicke	10 00	
"	21. Godfrey W. Rhodes, K. C., St. Jo. & C. B. R. R	5 00	
"	23. John W. Cloud	240 00	
"	24. Henry A. Whitney	25 00	
"	24. W. C. Ennis	5 00	
"	26. Godfrey W. Rhodes, B. & M. R. R. R. Co. (in Neb.)	15 00	

1885.		Dr.	Cr.
Dec.	26. Godfrey W. Rhodes, H. & St. J. R. R. Co	$10 00	
"	26. James N. Lauder	15 00	
"	28. J. W. Marden	20 00	
"	28. S. W. Haines	10 00	
"	28. John Mackenzie	40 00	
"	29. Geo. Hackney	5 00	
"	30. Wm. Forsyth	90 00	
"	30. B. K. Verbryck	45 00	
1886.			
Jan.	2. R. C. Blackall	60 00	
"	4. Geo. W. Cushing	50 00	
"	9. E. A. Avery	10 00	
"	11. John Kirby	85 00	
"	11. T. L. Chapman	30 00	
"	11. G. M. Taylor	5 00	
"	11. Allen Vail	30 00	
"	12. B. Warren	25 00	
"	13. C. W. Mills	20 00	
"	14. Wm. Buchanan	160 00	
"	14. Patrick Reiley	10 00	
"	15. Richard H. Soule	40 00	
"	16. Jas. D. Hollister	5 00	
"	16. T. C. Salveter	5 00	
"	16. R. H. Parks	10 00	
"	22. E. B. Wall	55 00	
Feb.	20. J. E. Doran	5 00	
"	20. J. D. McIlwain	30 00	
"	20. C. A. Smith	5 00	
Mar.	12. Peter Smith	10 00	
"	23. H. Roberts	20 00	
"	23. John Devine	5 00	
"	23. D. C. Richardson	10 00	
April	1. John Voorhees	5 00	
"	1. J. H. Wickes	10 00	
"	3. Oliver P. Dunbar	10 00	
"	3. Robert Potts	5 00	
"	5. T. B. Stewart	5 00	
"	5. A. G. Steinbrunner	5 00	
"	9. M. M. Pendleton	10 00	
"	12. J. C. Barber	5 00	
"	14. James McGregor	5 00	
"	15. J. Van Vechten	5 00	
"	16. J. T. Leighton	5 00	
"	21. W. G. Van Buskirk	5 00	
"	22. George H. Haselton	15 00	

1886.		Dr.	Cr.
May	1. Benjamin Welch	$5 00	
"	8. William Wanless	5 00	
"	11. A. C. Robson	15 00	
"	14. D. B. Peabody	10 00	
"	17. John K. Hall	10 00	
"	25. F. G. Brownell	10 00	
June	3. John Coghlan	5 00	
"	5. A. Packard	5 00	
"	8. Annual Reports sold during year.	38 20	
"	8. Cash Account over	10 21	
1885.	*Credits.*		
June	9. By amount collected and paid to John Kirby, Treas....$3,045 20 Less sundry expenses. 1,265 39		$1,779 81
1886.			
June	9. By sundry amounts paid out during year, as follows :		
	Printing History and Early Reports		347 17
	Annual Report for 1885—Stenographer's bill and printing		792 87
	Engraving		72 16
	Circulars—printing		125 05
	Stationery		12 30
	Postage		94 00
	Office rent		200 00
	Sundry expenses		3 16
June	9. By amount collected during year and paid to John Kirby, Treasurer....$3,238 41 Less sundry expenses. 1,646 71		1,591 70
		$5,018 22	$5,018 22

On motion of Mr. Adams the report was accepted.

THE PRESIDENT—The next thing in order is the Treasurer's report; but as he has not yet arrived we will be obliged to lay that over for the present.

The next matter is the assessment and announcement of annual dues. As there has been an amendment proposed to the Constitution, we will omit the assessment and announcement of annual dues until later on.

The next thing in order is the appointment of a committee to nominate officers, and other committees. I will appoint as a committee to nominate officers :

R. H. Soule, New York, Lake Erie & Western Railroad ; Robert Miller, Michigan Central Railroad ; William Forsyth, Chicago, Burlington & Quincy Railroad ; John Hodge, Missouri Pacific Railroad.

To select a place for the next meeting : R. C. Blackall, Delaware & Hudson Canal Company ; George Hackney, Atchison, Topeka & Santa Fé Railroad ; W. B. Snow, Illinois Central Railroad.

On Correspondence and Resolutions : Godfrey W. Rhodes, Burlington & Missouri River Railroad ; H. A. Webster, New York Elevated Railroad.

On Subjects for Investigation and Discussion : J. W. Marden, Fitchburg Railroad ; John W. Cloud, Pennsylvania Railroad ; Thomas A. Bissell, Barney & Smith Manufacturing Co.

The next thing in order is the election of an Auditing Committee. The President read to the convention Section 2 of Article VIII. of the Constitution.

MR. LENTZ—I nominate H. D. Titus.

THE PRESIDENT—I believe Mr. Lentz is an officer of the Association.

MR. FORNEY—The Constitution says the Auditing Committee must "be nominated by any member who does not hold office."

MR. LENTZ—I stand corrected.

MR. MARDEN—I would nominate Mr. Leander Garey.

MR. MACKENZIE—I nominate H. D. Titus.

MR. WALL—I nominate Mr. G. W. Demarest.

THE PRESIDENT—Three members have been nominated. A motion that some member declare the vote of the Association would be in order.

MR. ADAMS—I move that the Secretary be authorized to cast the vote.

Agreed to.

MR. FORNEY—The Secretary declares Leander Garey, H. D. Titus and G. W. Demarest elected as the Auditing Committee.

THE PRESIDENT—The next thing in order will be unfinished business.

MR. GAREY—I move a suspension of the rules, in order that action may be taken on the amendment to the Constitution with reference to the amount of assessment that shall be made.

MR. FORNEY—The reason for suspending the announcement of the assessment of dues was that there was an amendment to the Constitution proposed increasing the amount of dues.

MR. GAREY—That was my object, so that the committee could act early in the session, giving the men a chance to pay their dues.

THE PRESIDENT—I think this amendment to the Constitution

comes up under the head of unfinished business. Is it necessary to suspend the rules on that account?

MR. WALL—On page 110 of the proceedings of last year, there will be found the following:

"In accordance with the instructions of the Executive Committee, I submit herewith a written notice in conformity to Article XI., Section 1, that at the next meeting we will ask for an amendment to the Constitution, Article X., Section 1, changing the words 'provided that no assessment shall exceed five dollars' to 'provided no assessment shall exceed eight dollars.'"

As stated at that time, the Executive Committee did not propose to assess eight dollars. They had not any such idea. But what they desired was the power to do that, should circumstances occur when they would need the money. The conventions are held a year apart, and in case more money should be necessary, we could not assess the requisite amount at any convention unless we gave notice a year before. I would therefore make a motion that the Constitution be altered in accordance with the notice submitted at the last convention, which would make Article X., Section 1, read: "provided no assessment shall exceed eight dollars."

The motion was seconded.

THE PRESIDENT—Does any gentleman wish to make any remarks on this subject?

MR. GAREY—Probably some of the members do not quite understand this. It is not incumbent on the Executive Committee to assess eight dollars, but it gives them the power to assess more than five, if necessary.

The motion was carried.

THE PRESIDENT—There was another amendment to the Constitution proposed at the last meeting. Will you take any action on that?

The Secretary read the following from page 110 of the Proceedings of the Nineteenth Annual Convention:

"MR. WALL—* * * I give notice that at the next meeting of this Association I will ask for an amendment to the Constitution as follows: Article VIII., Section 3, after the words 'the President, as hereinafter provided, shall,' the clause 'in consultation with the Executive Committee.' The section will then read as follows:

"COMMITTEE ON SUBJECTS FOR INVESTIGATION AND DISCUSSION.

"SEC. 3. At each annual meeting the President shall appoint a committee whose duty it shall be to report at the next annual meeting subjects for investigation and discussion, and if the subjects are approved by the Association, the President, as hereinafter provided, shall, in consultation with the Executive Committee, appoint committees to report on them. It shall also be the duty of the committee to receive from members questions for discussion during the time set apart for that pur-

pose. This committee shall determine whether such questions are suitable ones for discussion, and if so, they shall so report them to the Association.

"Article VIII., Section 4, after the words 'subjects for investigation, the President shall,' the clause 'in consultation with the Executive Committee.' The section will then read as follows:

"COMMITTEES OF INVESTIGATION.

"SEC. 4. When the Committee on Subjects has reported, and the Association approved of subjects for investigation, the President shall, in consultation with the Executive Committee, appoint special committees to investigate and report on them, and he may be authorized to appoint a special committee to investigate and report on any subject which a majority of the members present may approve of."

MR. WALL—It would seem proper to make a few remarks on the subject of these proposed amendments. At the time when they were submitted it was with the intention that the President should be aided in selecting the members of the committees by the Executive Committee. Heretofore it has been the practice for the President of the Association to make up the committees for each subject, as the subjects were submitted to him by the special committee directed to select these subjects. In a great many cases it has been exceedingly difficult to get good working committees. In some cases the committeemen are so far apart that they cannot give that combined study to the subject which is necessary, and oftentimes their views are so diametrically opposite that they cannot come to any conclusion. The Executive Committee, being made up of members attached to roads in different parts of the country, are much better aware of these differences—I mean collectively—than one man would probably be, and, therefore, they would be able to assist the President in coming to a conclusion as to who would be the best men to discuss the various subjects. Heretofore the President has not been in a position to require the Executive Committee to assist him in this matter, and it was with a view that he would have that assistance that we submitted these amendments. But some of the journals reporting the proceedings of our meeting took it to be an attempt on our part to curtail the action of the President, and this was so opposed to what we intended that I have been rather backward in insisting upon the passage of these amendments this year. In fact, if the understanding which has been disseminated by the papers has taken hold generally on the minds of the members, I would not care to bring them forward. But if the members would consider them in the view that we did when we submitted them, I think it would be to the benefit of the Association that they should be passed.

THE PRESIDENT—If no one moves the adoption of these amendments, we will proceed to the next business in order.

MR. GAREY—I most heartily approve of the object of this amendment, but would suggest that perhaps a change in the wording should

be made. Instead of "the President shall, in consultation with the Executive Committee," put "the Executive Committee shall, in consultation with the President, appoint special committees," which would relieve the President very much and accomplish the same object. You all know that I speak advisedly when I say that the President's duties are quite arduous, and any relief that you can give him certainly is his due.

MR. WOOD—I move the adoption of the amendment as printed in the record of the transactions of the Association.

MR. ADAMS—I would second Mr. Garey's proposed amendment. I think that would improve it.

THE PRESIDENT—I think if there was an amendment made to that it would have to lie over another year ——

MR. ADAMS—I do not see why it should.

MR. LENTZ—I second Mr. Wood's motion.

MR. ADAMS—I cannot see why it is not in continuation of the same subject and would come properly before us this year.

THE PRESIDENT—It is moved by Mr. Wood and seconded by Mr. Lentz that the amendment, as proposed, be adopted.

MR. GAREY—I would move as an amendment to the amendment to put the words "Executive Committee" in place of the word "President," and the word "President" in place of the words "Executive Committee."

A *viva voce* vote was taken on Mr. Garey's amendment. The Chair was unable to decide whether the *ayes* or the *noes* were in the majority, and called for a rising vote. This resulted in the adoption of the amendment by a vote of 16 to 8.

THE PRESIDENT—The amendment is carried. The question now before the house is, shall the amendment as amended be adopted ?

A MEMBER—I do not think the question was understood. I did not understand it that way.

THE PRESIDENT—The vote was on the amendment to Mr. Wood's motion. Please read your amendment, Mr. Garey, so that the members can understand it.

MR. GAREY—Change the wording, and insert "Executive Committee" in place of "President," and "President" in place of "Executive Committee."

MR. MACKENZIE—I move that the amendment as amended be adopted.

The motion was carried.

The Secretary then read Sections 3 and 4 of the Constitution, as amended.

MR. CLOUD—I would like to call attention to the inconsistency which we have got into by hasty action. The amendment to the amendment leaves the thing just the way it would have been if we had not made any amendment, because whether it is the Executive Committee in consultation with the President, or the President in consultation with

the Executive Committee, makes no difference. The President would finally announce it anyway; so that the result of the amended amendment is the same as it would be with the amendment before it was amended. But with the amended amendment the Constitution now reads, "On the subjects approved by the Association, the Executive Committee, as hereinafter provided, shall, in consultation with the President," etc., and there is no hereinafter provision for the Executive Committee to do the work. Therefore, in order to keep the Constitution as it ought to be, there should be notice of some further amendment, as it is now inconsistent. I should prefer, myself, to reconsider the whole vote and adopt the amendment as originally proposed. It will work just exactly the same result as the amended amendment will.

MR. ADAMS—It seems to me that it puts the responsibility on the Executive Committee instead of on the President. In other words, it puts the burden on the Executive Committee and relieves the President of burdens that have been borne by him.

Mr. President, there is evidently a little discrepancy here, so I would move, in view of that fact, to reconsider.

The motion to reconsider was carried.

MR. CLOUD—I move that the Constitution be amended in Sections 3 and 4 of Article VIII., in accordance with the notice given at the last annual convention.

The motion was seconded by Mr. Wood.

MR. GAREY—I move to lay this subject on the table, and make it the special order for Thursday, at 10 o'clock.

The motion was seconded by Mr. Adams, and lost.

MR. GAREY—I do not like this. It makes the President select the committees to do the work. Then the Executive Committee can say: You take these men off, and put some other men on. It requires the work to be done all over again. It is not right. You put the work all on your President, and then the Executive Committee does with him as they choose.

MR. ADAMS—What I want to say is perhaps not exactly in order, but I just wish to reiterate what Mr. Cloud says. He says we acted hastily. I think it was a hasty vote to vote down the postponement of action till Thursday morning. It would have given all of us an opportunity to study this matter thoroughly, and we could get up a provision to cover the ground as we want it done. We do not want to rob the President of his power. We want to aid him by the Executive Committee. I do not think Mr. Wall wants to cut off the power of the President at all. But, as it reads, it does have that effect to a considerable extent. Now, if the Convention understood just what was designed, it seems to me they would not have voted down that motion, and I think if they would give the matter a moment's thought, somebody would move to reconsider it. We vote a little too quick, sometimes, on these questions; and, as Mr. Cloud says, we almost always make a mistake when we do things in a hurry.

MR. CHAMBERLAIN—I move that this matter lay on the table, to come up on Thursday, at 10.30.

The motion was carried.

MR. FORNEY—Under the head of unfinished business, I will introduce the following:

At a meeting of the Executive Committee, held in Buffalo, Sept. 17, 1885, the Secretary was instructed to submit resolutions at the next meeting of the Association, thanking the Erie Railroad Company and its Superintendent of Motive Power, Mr. F. M. Wilder, for assistance rendered in making the tests of couplers, the use of yard room, power, trainmen, etc., and everything necessary for the work; therefore, be it

Resolved, That this Association hereby expresses its thanks to the New York, Lake Erie & Western Railroad Company and its efficient Superintendent of Motive Power, Mr. F. M. Wilder, in accordance with the meaning of the resolution adopted by the Executive Committee, and the intention of the movers thereof.

The motion was carried.

THE PRESIDENT—If no member has any further unfinished business, new business will be in order.

MR. WALL—Under the head of new business, I would make a motion that the revision of the Rules of Interchange shall be the special order of business to-morrow at 10 o'clock. On page 164 of the last Annual Report, there is a section which says that the revision of the Rules of Interchange shall be the special order of business at 3 o'clock on the second day of each annual convention, unless otherwise ordered. The object of the motion I have made is to enable us to have a little longer time to consider the rules. I understand that we do not have the use of the hall after 5 o'clock. The Executive Committee think it would be impossible to consider the rules in the time from 3 to 5. We would therefore like to have it specially ordered that the consideration come up to-morrow at ten.

The motion was seconded.

MR. ADAMS—I approve Mr. Wall's purpose very fully, but I think that we should make one mistake if we did as he suggests. My judgment is that some of our members make it a special point to be here to attend the discussion of the Rules of Interchange, and have made their plans to be here to-morrow afternoon, knowing that the By-laws provide that it shall come up at 3 o'clock. It would be better to put ourselves to some inconvenience, even if we had to remain in session an extra day, rather than disappoint and displease such parties.

MR. CLOUD—I think that the convention can get through with the Rules of Interchange in three hours. By reason of the work that has been done on them by the sub-committee and the Executive Committee yesterday, the probabilities are that there will not be a great deal of change except in the matter of prices, and so on. I should rather see it held at the time named in the Constitution if we can do so, and have a prospect of finishing to-morrow.

MR. WALL—Under those circumstances, if we have till six o'clock, and there is this feeling about having this meeting at the time we had it before, I withdraw the motion.

MR. HODGE—I hope very few changes will be made in these articles. I think they are very well as they stand.

THE PRESIDENT—Has any member any new business to offer? If there is no other new business, the next thing in order will be the Reports of Committees.

MR. ADAMS—I would move that Article 6 of the By-laws be changed so as to read that the Rules of Interchange shall be the special order of business at 10 o'clock, instead of 3 o'clock, on the second day of each annual convention after this year.

The motion was carried.

THE PRESIDENT—I will call for the report of the Committee on Standard Freight-Car Trucks.

This report was read by Mr. Miller, and is as follows:

REPORT OF COMMITTEE ON A STANDARD FREIGHT-CAR TRUCK FOR CARS OF 40,000 LBS. CAPACITY.

In presenting the Fifth Annual Report on a Standard Freight-Car Truck, we again refer to the previous reports and the discussions on them, which are contained in the printed proceedings of the Association as follows:

Niagara Meeting, 1882, page 54.
Chicago " 1883, " 79.
Saratoga " 1884, " 36, 102, 108
Old Point Comfort, meeting 1885, pages, 46 to 55.

At the last meeting general plans were submitted for a diamond truck with channel transoms, arranged to be used with a swing bolster or with a rigid one. The report recommended that a number of trucks be built by the different roads, from the plans presented, and that they be put into service for trial. This recommendation was approved by the Association, but the only roads known to us which have built the proposed standard trucks, are the Michigan Central Railroad and the Chicago, Burlington & Quincy Railroad. These roads have each sent to Niagara Falls a pair of trucks, and they are now on exhibition at the New York Central Depot.

One of the Michigan Central trucks has a swing bolster, and one a rigid *iron* bolster. Those sent by the Chicago, Burlington & Quincy Railroad have trussed wooden swing bolsters. Twelve of these trucks have been in service about six months

under tenders of passenger locomotives on the different divisions of the road, and have given good satisfaction. A pair of trucks with rigid bolsters have also been built recently by this company, and are now in a similar service.

The details shown on Plates VII. and VIII. are similar to those on the Chicago, Burlington & Quincy sample trucks. The iron bolster used by the Michigan Central road in their sample truck is shown on Plate IX.

The Master Car Builders' Journal Box, as modified for larger bolts, is shown on Plate X.

The Brake Gear is shown on Plate XI.

These general plans and details, excepting the centre plate, are now recommended as standard.

The object of the Association (as stated in the Constitution) being "to bring about uniformity and *interchangeability* in the *parts* of railroad cars," it is rather surprising that no effort has been made heretofore to secure interchangeability between the two grand divisions or largest *parts* into which a car is divisible, namely, the car body and the truck. It is quite probable that the sample trucks would not fit under any car not built specially for them. Chicago, Burlington & Quincy car, sent with the trucks, had the body side bearings spread 4 inches in order to make them fit those on the truck.

The centre plates on the Michigan Central trucks are the standard pattern for that road. Those on the Chicago, Burlington & Quincy trucks are the Chicago, Burlington & Quincy standard pattern, and they are not interchangeable with those of any other road.

A standard spread and height of side bearings and forms for centre plate bearings have thus incidentally become a part of this report.

In order to ascertain the practice of the different roads in these details we sent out circulars asking the members to recommend a standard spread of side bearings and forms for center plates. Replies from twenty-eight members give distances varying by fractions of an inch from 50 inches to 63 inches; the majority of them of course preferring that of their own road, and those recommending anything different naming 60 inches as a desirable distance between centers of side bearings.

In a swing-bolster truck the position of the side bearings

affects the position of the spring hangers, and with bearings outside the hangers it is best to spread them as far out as possible so as to bring the springs near the side frame. The following is a list of twenty-eight roads reporting spread of side bearings in reply to our circular.

DISTANCE CENTRE TO CENTRE OF SIDE BEARINGS REPORTED BY TWENTY-EIGHT ROADS.

Illinois Central	42½ inches.
New York, Lake Erie & Western	50 "
Pennsylvania	50 "
Pittsburg, Fort Wayne & Chicago	50 "
Chicago & Atlantic	54 "
Boston, New York & Philadelphia	55½ "
Atchison, Topeka & Santa Fé	56 "
Chicago, Burlington & Quincy	56⅛ "
New York Central & Hudson River	58 "
Buffalo, Rochester & Pittsburg	58 "
Wabash	58 "
Missouri Pacific	58 "
New York, Chicago & St. Louis	58 "
Baltimore & Ohio	58 "
Flint & Pere Marquette	58½ "
Chicago, Rock Island & Pacific	58½ "
Chicago & Eastern Illinois	60 "
Great Western Despatch: Erie & Pacific Despatch	60 "
Norfolk & Western	60 "
Northern Pacific	60 "
Hot Springs	60 "
Lehigh Valley	60 "
Indianapolis Car Co	60 "
New York, Susquehanna & Western	60 "
Philadelphia & Reading, New Jersey Division	61 "
Chicago & Alton	62 "
Lake Shore & Michigan Southern	63 "
Boston & Albany	64 "

The engraving, Plate VII., shows the side bearings, five feet between centres. This distance seems to be the nearest to that preferred by the majority of the members reporting, and it is recommended as a standard for both truck and car body.

The vertical relation of the centre-plate bearing must also be fixed, in order to secure a fit between the truck and car body. The height of side bearings from bolster are shown on Plate XIII.

The drawings of centre plates, Plate XII., sent by request of our circular, show as great a diversity of forms and sizes as is usually found when any new investigation is made on the subject of existing practice in freight-car details.

Centre plates may, however, be divided into three general forms, and they are shown so grouped on Plate XII.

First—Centre plates in which the bearing is a portion of a sphere with an annular boss around the centre-pin. The Erie, Michigan Central, and Lehigh Valley plates are types of this form.

Second—The large centre bearing where the bearing surface is a flat-edged ring, of large diameter, sufficient to support the car body horizontally without the aid of side bearings. The Philadelphia, Reading & Pennsylvania Railroad are types of this form.

Third—Centre plates in which the bearing surface is a small ring, either rectangular or semi-circluar in cross section. The Boston & Albany and the Chicago, Burlington & Quincy are types of this form.

The form of centre plate preferred by the majority of members reporting, and that which we think is the best, is the first general form, with a bearing of the shape of a portion of a sphere, in other words, a ball joint. Fig. 1, on Plate XII., gives the dimensions of a centre plate of this form which is recommended for standard. Plate XIII. shows this centre plate and its vertical relation to the side bearings, which is also recommended as standard.

The following drawings accompany this report:

Plates VII. and VIII.—General plan and details of proposed standard truck.

Plate IX.—Iron truck bolster, made by Michigan Central Railroad.

Plate X.—Master Car Builders' journal box, modified for larger bolts.

Plate XI.—Brake gear for standard truck.

Plate XII.—Twenty centre plates, representing present practice.

Plate XIII.—Proposed standard centre plate and side bearings.

In conclusion, we recommend as standard the general plan and details for a standard freight-truck, as shown on Plates VII., VIII., X., XI. and XIII.

R. MILLER, Chairman,
W. FORSYTH,
H. S. BRYAN,
J. N. BARR,
JOS. WOOD,
WM. MCWOOD,
} *Committee.*

On motion of Mr. Hodge the report was accepted.

THE PRESIDENT—Section 7 of our By-laws reads: "Unless otherwise ordered, the discussion of questions proposed by members shall be the special order at 12 o'clock M. of each day of the annual meeting." As the time has come for that, we will postpone the discussion of the Report on Freight-Car Trucks, and if any member wishes to propose any question for discussion he can do so now.

If no one wishes to offer any special question for discussion, it will be in order to go on with the discussion of the Report on Freight-Car Trucks.

MR. MACKENZIE—What was the idea of the committee in making the annular boss on the lower end of the centre-plate nearly the size of the upper one? The annular boss is as large as the cavity; consequently the advantages that a great many of us claim in the ball-face centre-plate is entirely done away with here.

MR. FORSYTH—There is an eighth of an inch opening at each side, giving a total motion of a quarter of an inch. The diameter of the boss is 4 inches on the truck centre-plate, and the diameter of the hole in the body centre-plate is 4¼ inches.

MR. CLOUD—Personally, I should feel much better prepared to discuss this question, which I think is very important, after having seen these trucks, and I would suggest that perhaps it would be advisable to postpone the further consideration of this report until this afternoon or some other time, until we have had a chance to see the trucks, and meanwhile take up now another report.

Seconded.

MR. GAREY—Would there not be a liability of these centre-plates filling in with dust, so as to make it nearly solid, and why would it not be a good plan to invert it?

MR. MILLER—I do not know that there has been any such difficulty. I do not think that the Chicago, Burlington & Quincy Railroad ever used any other form, and I think it has been the standard form of the Illinois Central, and I never knew there was any difficulty in that respect myself.

MR. COOPER—It has been used twenty-five years on the Chicago, Burlington & Quincy Railroad.

MR. SNOW—We have used that centre-plate always, and it has worked first rate. The only objection I have to the truck proposed is that the spring-hangers are too far in. I always think it best to get them out next to the arch-bars. That is the reason you will notice that our side bearings are 42½ inches apart. They are that way on purpose to get our hangers out of the way, next to the arch-bars. I have seen Michigan Central trucks on which they have been carried in further, and could not get down and go out at the centre. For that reason I put on a bolster-strap on the top of ours to hold them in, for fear they might slip at some time.

THE PRESIDENT—If there is no objection made, we will postpone this subject until some future time, after we have seen the trucks. I will call for the report on Standards and Appliances for the Safety of Trainmen.

MR. FORNEY—I believe I am the only member of that committee present, and I will say that we have no report, and I can perhaps make my apology best by giving a little of the inside history of the committee. Last year your former President was about to appoint that committee. He did me the honor to consult with me in relation to the appointments, and you remember Mr. Kirby was on the committee a year before, and they were discharged because they had no report, and a new committee was to be appointed. I ventured to suggest to Mr. Garey that he should reappoint Mr. Kirby, and Mr. Hegewisch's name was mentioned as Chairman; and I then ventured further to suggest that if Mr. Garey would put me on the tail end of the committee I would stir up Mr. Hegewisch and Mr. Hegewisch would stir up Mr. Kirby, and in that way some work could be accomplished. Unfortunately for that plan, however, Mr. Hegewisch has been absent from New York a large part of the year. He had been in Chicago for several months, and when he did return to New York it was then too late to get up a report. During the past year it was hoped that first two members would wag the tail end of the committee, but for some reason they did not seem prepared to do it; but if the Association will continue the committee for another year, the tail end will then try to wag the rest of the members.

On motion of Mr. Lentz, the committee was continued for another year.

THE PRESIDENT—The next subject is British and Continental Practice in Matters of Interest to the Master Car-Builders' Association.

MR. SOULE—I shall have to report that our committee is not ready to present a report on this subject, and in explanation I would say that at the time of the last convention, when the regular committees were announced, and it became known there was such a committee and I was its Chairman, I foresaw there would be sufficient work in that subject to engage the committee's attention. At the same convention it was

made a part of the Executive Committee's duty to revise the Rules of Interchange. I believe that after the summer vacation the Executive Committee held a meeting and squarely met that issue by unloading on a sub-committee, of which I was the unfortunate Chairman. So early in this spring, when it became time for us to think about our committee work, I was confronted by the fact that I was Chairman of two committees—one on British and Continental Practice, and the other on the Interchange Rules, and I foresaw that it would be impossible for me to discharge the duties of both chairmanships. Therefore we took up the Interchange Rules, thinking that perhaps was the most important, and resolved to come here and flunk on the other matter.

On motion of Mr. Wall, the committee was continued.

THE PRESIDENT—I will call for the report of the next committee, on Automatic Freight-Car Brakes.

MR. RHODES—Mr. Chairman, the Committee on Automatic Freight-Car Brakes are very sorry they have not a formal report to offer. All we can report is progress. We found that the undertaking required considerably more work than we had at first anticipated. We commenced our work about, I think it was, as early as October, and we found that it was quite impossible to make any arrangements by which we could make a formal report of results in time for this June meeting. We have, however, arranged for a series of tests, and have succeeded in getting a number of competitors to enter the tests. Six will compete, and the following is what our plan of trials will be: We have arranged for a series of three tests. The first will take place at Burlington, Iowa; I think it is July 13, and from that on. The tests will probably last four days for each competitor. There are six competitors. Therefore these tests will take about twenty-four days. After they are over the committee have arranged for an endurance test of eight months. In the arrangement of this test we will want the assistance of the Association. The endurance test will be out of the control of the committee, and to make it a success we will want to have a great many helpers. The idea of the endurance test is that the brakes must be kept in service. If one brake is side-tracked or does not get used, and another one is kept constantly in use, the third test, which is to take place in April, 1887, of the brakes in the condition in which they will be found in service, will not be a fair one. One brake will be in good order because it has not been used; another brake will be in bad order because it has been used; and the committee realize that the endurance test is going to be one which will be subject to considerable criticism. We think, however, that if the Association will give us their support, and will carry out the ideas we have of making that endurance test, that it will be a very valuable one. Our idea of the test and of keeping the record of the cost of the different brakes is to get as many of the broken parts together as we can. We do not want to have them broken and then have them disappear. We want every broken part to be saved. The parts that are to be saved will be painted

a special color. We do not want any of the parts which may be defective and may become broken to be scrapped. We want them saved, so that we may have a record of it to submit in our report.

The third part of the test will be of brakes in the condition in which we find them out on the road. That is again a point on which it is important that we have the assistance of the members of the Association. If the cars get more than ordinary attention on the road, the test will not be a fair one. Some of the brakes will be in good running order and others will not have got this special attention. They will be brought in as they are found on the road. In that way the committee can realize that they have to depend on the assistance of the Car-Builders to see that the cars come to the third test in proper condition.

Probably by next week we will have a little pamphlet issued which will give the members of the Association a complete idea of what the test is to be, showing a diagram of the ground where the stops are to take place and a detail of how the tests will be arranged, so that the Association will have a good idea of what will take place. The Chicago, Burlington & Quincy Road have offered the different competitors the privilege of going over the ground before the tests take place, so that on the days of the tests it will not be a trial to see how things are. The competitors will have been there before and gone over the ground, and their engineers will know where the stops are to be made and what can be done. We are in great hopes that the tests will go on smoothly. We have already been making trial tests, so that each man can know what his work is and the duty he is to perform.

I might say here, in connection with this test and with similar tests, that the Association ought to realize that in appointing a committee to do such work as that, that there are expenses connected with it, and that to get up an intelligent report the committee ought to have some funds. We cannot be mendicants, begging for everything. The Brake Committee has felt this, and we have already asked the Finance Committee for assistance in the appropriation of funds. You probably readily realize that there are expenses in conducting an experiment of the kind proposed. Somebody has to bear them. I hope to have an opportunity, as Chairman of the committee, to say something to the Executive Committee of the Association about that, and to explain to them some of the expenses that we expect to be put to.

THE PRESIDENT—You have heard Mr. Rhodes' statement on the subject of Automatic Freight-Car Brakes. What is your pleasure?

MR. DEMAREST—I move that the report be accepted and the committee be continued.

MR. GAREY—I would add to that motion—with the thanks of the Association for the work already performed.

The motion as amended was carried.

THE PRESIDENT—Does any one wish to discuss this brake question?

MR. SOULE—It having been decided that the Committee on

British and Continental Practice is to be continued, I would like to ask, on behalf of the committee, that they be empowered to add to their number. I think the results can be reached more promptly and more thoroughly if that privilege is allowed.

MR. FORNEY—I move that the committee be authorized to increase its number by two.

The motion was carried.

THE PRESIDENT—The next thing in order will be the report of the Committee on Trap Doors in the Roofs of Passenger Cars.

This report was read by the Secretary, and is as follows :

REPORTS ON TRAP-DOORS IN THE ROOFS OF PASSENGER CARS.

Your committee appointed to examine and report and furnish plans for trap-doors in passenger-car roofs have given the matter considerable attention, and have concluded, that in view of the difficulties attending the adoption of such plans, that it would be unwise to recommend any, as we find that the Master Car-Builders are almost unanimously opposed to the adoption of such plans.

We have come to this conclusion from the fact that among the many millions of people who ride on our railroads in this country, and in Canada, that the cases are very few in which doors in a roof would be of any use whatever.

It is generally believed that if a passenger was not held fast in the wreck, that he would be able to get out of some of the many openings that are usually found in our passenger cars, and if a passenger is crushed and held fast in the wreck, the trap-door in the roof, or elsewhere, would be of no use to him. These reasons, and others relating to the construction and injury to the strength and durability of a car, lead your committee to the conclusion that they would not advise the introduction of trap-doors in passenger-car roofs.

F. D. ADAMS,
JOHN MACKENZIE,
SANFORD KEELER,
R. H. BRIGGS,
} Committee.

On motion of Mr. Wall, the report was accepted and the committee was discharged.

THE PRESIDENT—I call for the report of the Committee on Standard Dead-blocks.

The Secretary read this report, which is as follows :

REPORT OF COMMITTEE ON STANDARD DEAD BLOCKS.

In making a report on this subject the members of your Committee have thought it would be best, first to review the action which the Association has heretofore taken with reference to this important subject.

In 1872, 2 ft. 9 in. was adopted as the standard height for draw-bars of freight cars, measured from the top of rail to the centre of draw-bar. It was not then specified whether this height was to be measured when the car was loaded or empty.

In 1884, the Executive Committee, in a report on the revision of standards, recommended that "the standard height of draw-bars for freight cars, measured perpendicularly from the tops of the rails to the centre of the draw-bar is hereby declared to be 2 ft. 9 in. *when the car is loaded to its full capacity.*" This recommendation was discussed at considerable length and the words "when the car is loaded to its full capacity" were striken out and the words "*when the car is empty*" were substituted for them, and the standard height of draw-bar which is now recommended by this Association, is 2 ft. 9 in. when the car is *empty*.

In 1882 it was recommended "that when double dead-blocks are made, they be made 8 inches square on the face, and 6 inches thick, and placed 20 inches apart, centre to centre, giving a clear space between them of 12 inches, and that those, whose preference is for single dead-blocks, must make them not less than 28 inches long, 7 inches thick, and 8 inches face." It was recommended "that the height of the dead-blocks from the rail to the bottom of the block be 3 feet."

In 1883 a committee recommended "that when double blocks are used, they measure not more than 30 inches from out to out, each block to be 20 inches (?) long and 8 inches wide, and when the single block is used, must not be less that 28 inches long by 7 inches thick and 8 inches face."

In the discussion which followed, the report was amended and reamended, until its recommendations were substantially the same as the standard adopted the year before. Mr. Goodwin then moved "that the dimensions for single and double dead-blocks recommended by the committee in their report, as amended, be referred to the members of the Association for

decision by letter-ballot, according to the constitution." In explanation of the motion, Mr. Goodwin said: "The difference between the report of the committee and the standard of last year is this: the double dead-block last year was 6 inches; the recommendation of this committee is that it should be 8 inches, which is a very wise one for the safety of the train-men."

Mr. Forney suggested that Mr. Goodwin should put his resolution in such a way that the question shall be submitted to the Association whether the dead-blocks shall be 8 inches thick instead of 6 or 7.

Mr. Goodwin declined to do that; his resolution was then adopted.

At the same meeting a resolution was adopted "instructing the Executive Committee to revise the resolutions relating to the recommendation of standards, and report to the next annual meeting what action, if any, is required to correct existing errors and discrepancies in the previous action of the Association."

After the adjournment of the Convention, an examination of the discussion and action of the Association showed that the Committee's report was amended in such a way that its recommendations were in substantial agreement with the standard for dead-blocks adopted the year before, and that in reality the only question to be submitted was, whether the thickness of the blocks should be changed from 6 or 7 inches to 8, and that the Committee did not recommend. No letter ballot was therefore taken on the resolution of Mr. Goodwin.

In 1884 the Executive Committee recommended "that the distance, 12 inches, between dead-blocks, recommended at the Sixteenth Annual Convention, be changed to 14 inches; that the length over all be changed from 28 to 30 inches, and the distance from centre to centre 22 inches, instead of 20."

This recommodation was submitted to letter-ballot the same year and was adopted. In the engraving printed in the circular sent out with the letter-ballot, the double dead-blocks were shown 8 inches thick, in accordance with the action of the Association of the year before. No distinct ballot was taken with reference to a change of the thickness of the blocks, but it was said in the circular that the proposed changes were shown in the engravings. It is therefore a little doubtful whether 6-inch or 8-inch is the present standard of thickness for double dead-blocks.

Fortunately the matter is one of not very great importance. With the exception of the thickness of the blocks, about which there is some doubt, the engraving on page 137 of the last Annual Report, represents correctly the present standard dimensions of dead-blocks.

Your Committee are quite well aware of the disfavor with which any change of standard already adopted by the Association is regarded; and properly so—by a majority of its members. Nevertheless, if there is good reason for making such a change the sooner it is done the better. In the case of the standard dead-blocks, it will be seen that the height from the tops of the rails to the under side of the sill is 3 feet. This would make the height to the centre of the dead-block 40 inches. The height of draw-bars and dead-blocks of twenty-four of the principal railroads is given in the following list:

NUMBER OF CARS OWNED BY, AND STANDARD HEIGHT OF DRAW-BARS AND DEAD-BLOCKS ON DIFFERENT ROADS.

	Number of Cars owned.	Height from top of Rails to centre of Draw-bar.	Height from top of Rails to centre of Dead-block.
		Inches.	Inches.
New York Central & Hudson River	31,117	33⅝	44
New York, West Shore & Buffalo	7,721	33	42
Pennsylvania	47,013	35	42¾
New York, Lake Erie & Western	31,000	34	42¾
Lehigh Valley	24,247	35¾	....
Delaware & Hudson Canal Co	11,392	33½	44¾
Buffalo, New York & Philadelphia	5,680	34	43¾
Delaware, Lackawanna & Western	24,000	32½	....
Chicago, Burlington & Quincy	17,940	33	40¼
Chicago, Rock Island & Pacific	8,081	33	40
Chicago & North Western	21,000	33	41⅛
Illinois Central	9,075	33	41½
Grand Trunk	10,375	33	41

	Number of Cars owned.	Height from top of Rails to centre of Draw-bar.	Height from top of Rails to centre of Dead-block.
		Inches.	Inches.
Intercolonial	4,745	33	40½
Missouri Pacific	18,050	33½	42
Central Vermont	3,256	33	40¾
Burlington, Cedar Rapids & Northern	4,307	35	42
Mobile & Ohio	1,553	34½	41½
Louisville, New Albany & Chicago	2,286	35	43½
Chichago, Milwaukee & St. Paul	20,498	33½	41¼
Detroit, Lansing & Northern	2,681	33	39¾
Chesapeake & Ohio	5,953	35	43½
Baltimore & Ohio	21,912	35	44½
Chicago & Alton	6,666	35	43½

From this it will be seen that on only three of the roads are the dead-blocks placed as low as the standard height. All the other roads place them higher. This is tolerable good evidence that the standard height is too low.

By comparing the height of draw-bars, in actual use on the different roads named, it will be seen that a majority—15 of them —are over 33 in. high. If we count the cars owned by those roads, we find that those lines which place the draw-bars higher than the Master Car-Builders' standard, own 239,755 cars, whereas those which have adopted 33 in. or under, own only 100,-793. It is fourteen years since the standard height of 33 in. was recommended by the Car-Builders' Association, and yet it has not secured a more general adoption than the figures which have been quoted indicate. All of the members of the Car-Builders' Association will agree that it is very desirable to secure uniformity in the height of draw-bars. The question then comes up, with the prevailing practice which has been described, what is the best method to adopt to secure uniformity? Is it to adhere to the standard which was adopted fourteen years ago, or would the

end aimed at be best secured by a modification of it to suit the existing practice of the principal lines? Doubtless, if the standard was to be established to-day it would be made higher than it was in 1872. As already stated, in 1884, when the standards were revised by the Executive Committee, they recommended that the height of draw-bars should be 2 ft. 9 in. "when the car *is loaded to its full carrying capacity.*" The Association overruled the recommendation of the Committee, and made 33 in. the height when the car is *empty.* The discussion of this subject, however, revealed that many of the members misunderstood that the standard height was to be measured when the car is *loaded.* In recommending a standard for dead-blocks the Committee at the outset have encountered the difficulty that the present height of draw-bars is *too low,* and as it determines, to some extent, the height of the dead-blocks the Committee were compelled to consider the one standard as well as the other. The question which they felt obliged to entertain was that which has already been stated, that is, what action of the Association will be most certain to bring about uniformity in the height and dimensions of draw-bars and dead-blocks? On careful investigation your Committee were compelled to conclude that some modification in the standard height of draw-bars and dead-blocks is essential to secure their general adoption.

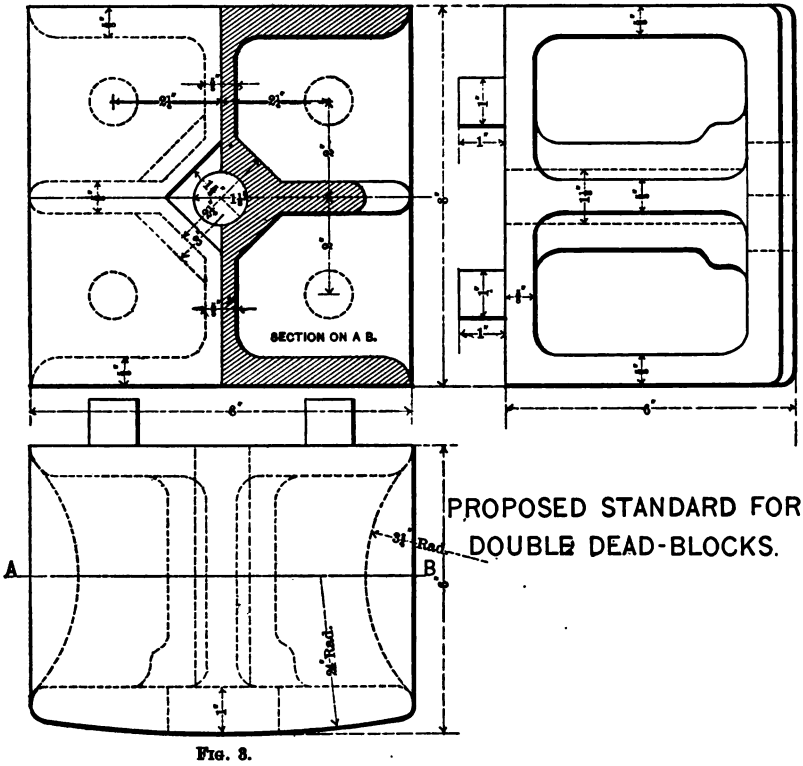
They therefore recommend:

1. That the standard height of draw-bars for freight-cars, measured perpendicularly from the tops of the rails to the centre of the draw-bar, shall not exceed 2 ft. 11 in. when the car is empty, nor be less than 2 ft. 9 in. when it is loaded.

2. That the height of dead-blocks, measured from the tops of the rails to the centre of the blocks, be not less than 3 ft. 5 in. when the car is loaded, nor more than 3 ft. 9 in. when it is empty.

3. That when double dead-blocks are used that their vertical height and their width, measured crosswise to the track, be each 8 in., and their thickness, measured lengthwise to the track, be 6 in.; that they each consist of a casting as represented by Figs. 1, 2 and 3 submitted with this report.

Fig. 1. Fig. 2.



PROPOSED STANDARD FOR DOUBLE DEAD-BLOCKS.

Fig. 3.

4. That when a beam, attached to the end-sill, is used for carrying the dead-blocks, that it be made 36 in. long, and 8 in. vertical depth, and not less than 4 in. thick, as shown in Figs. 4 and 5.

5. That in other respects, double and single dead-blocks be made in conformity to the standards heretofore adopted by this Association, as shown in Figs. 6 and 7, submitted with this report.

6. The Committee also recommend that the nuts on the ends of the truss-rods be seated in cup washers, so as not to project beyond the surface of the end-sill, and that the space between the ends of the cars be kept as clear as possible of bolt heads or other objects which are liable to catch the clothing or injure those engaged in coupling cars.

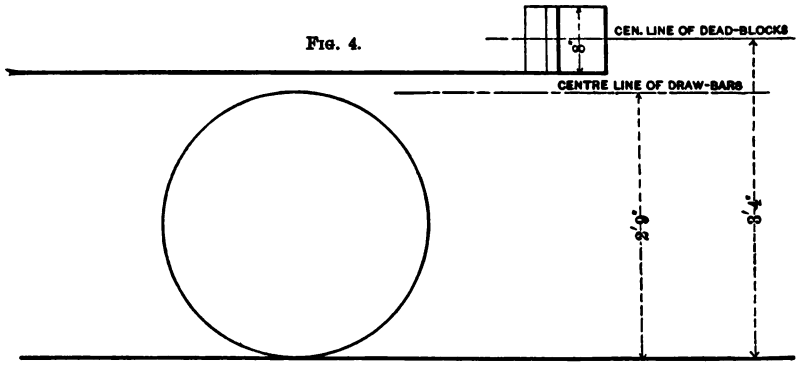

CEN. LINE OF DEAD-BLOCKS
8"
CENTRE LINE OF DRAW-BARS
2'-9"
3'-4"

FIG. 4.

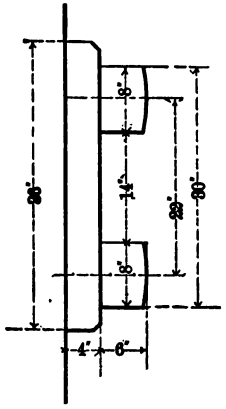

8"
14"
6"
26"
22"
30"
4"
6"

FIG. 5.

Further, the Committee recommend the adoption of the following resolution:

Resolved, That the recommendations of the Committee on Dead-blocks be submitted to the members of the Association for approval by letter-ballot.

CHARLES BLACKWELL,
G. W. DEMAREST,
M. N. FORNEY,
} Committee.

On motion of Mr. McIlwain the report was accepted.

MR. CLOUD—The report of the Committee on Dead-blocks seems to have omitted one matter which is very important. I see the com-

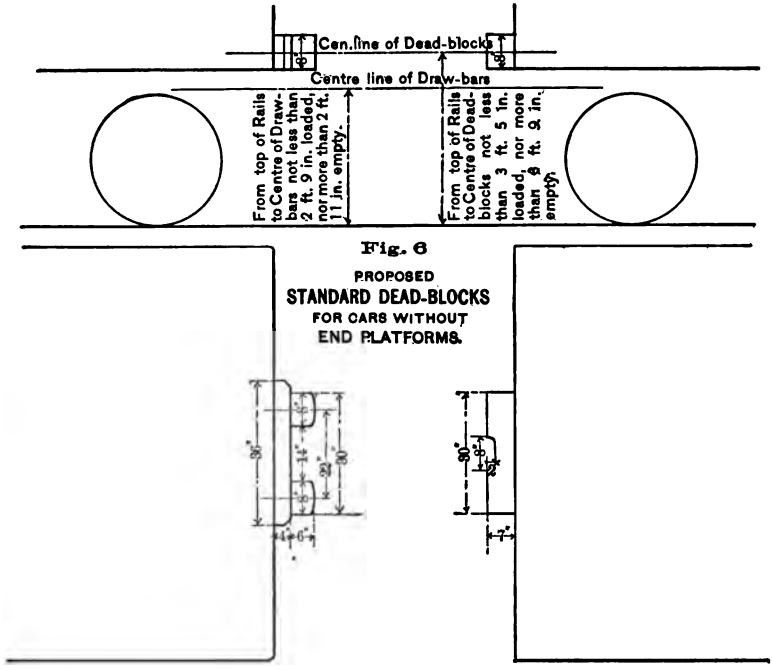

Cen.line of Dead-blocks
Centre line of Draw-bars
From top of Rails to Centre of Draw-bars not less than 2 ft. 9 in. loaded, nor more than 2 ft. 11 in. empty.
From top of Rails to Centre of Dead-blocks not less than 3 ft. 5 in. loaded, nor more than 3 ft. 9 in. empty.
PROPOSED
STANDARD DEAD-BLOCKS
FOR CARS WITHOUT
END PLATFORMS.

Fig. 6

mittee have taken up draw-heads and dead-blocks together, and having done so, the matter which I propose to mention properly comes within the scope of the report, and that is the relation of the face of the dead-blocks to the face of the draw-head lengthwise with the car, and I think that it would be perfectly proper to have included in any recommendations this convention adopts, a statement to the effect that when the draft springs are compressed solid by buffing, the face of the draw-head should not extend beyond the face of the dead-block, and with that addition to what they have recommended it seems to me we would have two or three matters which are well considered and well worthy of submission to letter-ballot. I believe that the change proposed in the standard of

the Association for height of draw-bar, giving a margin of from 2 feet 9 inches to 2 feet 11 inches, not to be exceeded under any conditions of load, is a very wise one, and it seems to me that the committee has very fully brought forward the proofs that the standards of the Association are behind the practice. The matter of the height of dead-blocks is also apparently well considered, allowing a variation of 41 inches to 45 inches from the top of the rail to the centre of the dead-block under all conditions of lading, and I believe that if these two matters were made standard practice by the roads represented in this Association, that that

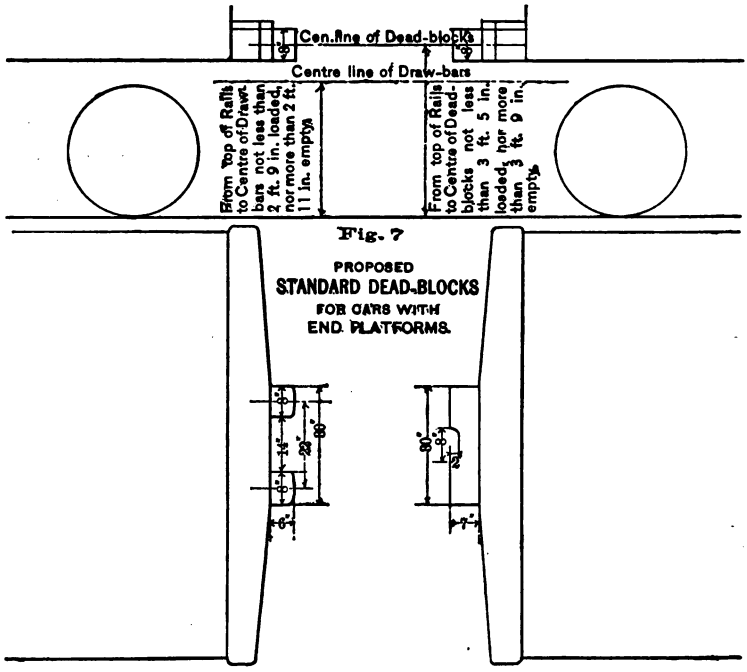

Con. line of Dead-blocks
Centre line of Draw-bars
From top of Rails to Centre of Draw-bars not less than 2 ft. 9 in. loaded, nor more than 2 ft. 11 in. empty.
From top of Rails to Centre of Dead-blocks not less than 3 ft. 5 in. loaded, nor more than 3 ft. 9 in. empty.
PROPOSED
STANDARD DEAD-BLOCKS
FOR CARS WITH
END PLATFORMS.

Fig. 7

would do more toward the safety of our trainmen than we could do in any other way, and I shall hope to see these two points, together with the matter of the relation between the face of the draw-head and the face of the dead-woods, as I have already stated, adopted by this convention and put on record as our opinion that it is the best we can do to-day toward the safety of the trainmen—better than applying any automatic coupler that is at present before the railroad public. I do not mean to say that it would be better than it would be if all the cars in the country were equipped with some automatic coupler.

It seems to me, however, that there are other matters contained in their recommendations that do not properly belong in the category of subjects that should be submitted to the Association by letter-ballot. The recommendation in Section 6 of the report of the committee, that nuts on the ends of the truss rods be seated in cup washers, etc., while

it is very good practice, it is hardly, perhaps, such a subject that we need to submit it to letter-ballot whether it shall be a standard or not. But Sections 1, 2, and 3, it seems to me, with the additions of the relations of the faces of the draw-heads and the faces of the dead-woods, are very important matters—matters which we should, at this convention, take some definite action on.

In regard to the drawings, they submit a lengthy report showing the dead-block which they propose. It seems to me, perhaps, that it is as good as any other form, with the exception that it does not widen up quite as much as it might; but that is not material one way or the other. I do not care particularly about the form and material if we get to the right points for the safety of our men. If we get the relative positions correct for the safety of our mechanism, we will perhaps have accomplished our aim.

MR. ADAMS—There is no one perhaps present who appreciates more than I do myself the necessity of having the draw attachments of our cars of uniform height; and while I am anxious to see them all of a height, I cannot quite see the propriety of making the change. Fourteen years have passed since the adoption of this standard height, and according to the report of this committee that height is adopted on only about one-third of the cars at the present day. Now, have we good reason to suppose that by adopting another height that cars will be brought up to that height? To be more particular, I will mention the fact that the New York Central Road had for their standard height, before this was adopted, 28 inches. They had probably at that time twenty or more thousand cars drawing some three or four inches lower than this standard, and they went to the expense of raising them all. Now, you ask the New York Central Road which has twenty-five or thirty thousand cars to raise again to some other height.

MR. FORNEY—If Mr. Adams will permit me to interrupt here, I may, perhaps, answer that point. The drawing was submitted to Mr. Buchanan, of the New York Central Railroad, and he entirely approved of it. Since they commenced using the Ames draw-bar they changed the height somewhat. I believe their present height ——

MR. ADAMS—Perhaps I can give a little idea on that. Mr. Buchanan's draw-bar is the standard now, within five-eighths of an inch. His dead-blocks are four inches higher than the other roads that are running in connection with them, and he wants to come up on that point to get the dead-blocks up, because he is up four inches more than he ought to be. There are always wheels within wheels. Now, I am not opposing the report of this committee at all; but it seems to me that this going back on what we have adopted does not look quite right. I believe it would be just as difficult to get this change made now. If we should vote to change the height of the draw-bar to 35 inches, and the height of the block to 44 inches, it would be just as hard to get these roads to make the change again, as it is to get the roads who have not changed to make the change to the present standard.

MR. FORNEY—I suppose, having been instrumental in preparing this report, it would be well to lay before the Association as full information as possible in regard to it. It is a subject in which I have been interested a great many years, and particularly of late years, since the question of automatic couplers has been brought up so often and there has been so much discussion, and so much interest felt in the whole subject. Considering the difficulty of adopting any standard uniform automatic coupler through the country, the committee felt that very much more could be accomplished in the way of saving the lives and limbs of trainmen if the arrangement on the ends of the cars were simply improved and made uniform, than could be expected from any effort to introduce automatic couplers. The Railroad Commissioners and the people generally of the country are very much, and very properly, concerned about the safety of trainmen, because the number of persons injured annually is appalling, and represents an amount of suffering well worthy the attention of this Association or any other body, and anything that can be done to diminish that should be of interest to all the members here. That being the case, and feeling that the thing most needed to be done at present was to make some change in the construction of the ends of cars, the committee naturally took up the question and looked about us to see what was the present practice, and it seemed to us that if the leading lines could be brought to agree on some uniform standard that a very great step would be taken, and then the smaller lines would almost be compelled to fall into the practice of the leading lines. With this in view, we then went to see Mr. Buchanan and Mr. Toucey, of the New York Central Railroad, and discussed the matter with them. I went to Altoona and had an interview with Mr. Ely, and then called a meeting of the representatives of the New York Central, the Pennsylvania, the Baltimore & Ohio and the Erie. We held a meeting and discussed the substance of this report, and I think all those present were agreed with reference to the general dimensions which have been proposed. Now, it may not be known to most of the persons here present that the standard height of draw-bar is 2 feet 11 inches on the Pennsylvania. The Baltimore & Ohio have the same. The Erie Road have a height of 2 feet 10 inches, I believe —all of them higher than the standard height of the Master Car-Builders' Association. There are a good many roads that are higher. The question which the committee had to consider then was simply this—shall we be more likely to secure uniformity by adhering to the standard adopted fourteen years ago, or by bringing about the change proposed? And we were compelled to come to the conclusion that by making the change proposed in our report we would be more certain to bring about uniformity than if we adhered to the old standard.

I quite agree with Mr. Adams. He was in the thick of the fight at Richmond, when we determined on this matter of 2 feet 9 inches, and the older members of the Association who have struggled with these standards many years naturally feel an affection for them. I have that

feeling myself, and therefore any change largely goes against the grain. But the question comes up—will we be more likely to bring about uniformity by making the change proposed, or by adhering to the old standard ? It may be remembered by some of the members that at the Saratoga meeting, when the Executive Committee recommended that the standard should be 2 feet 9 inches when the car was loaded, that there were a great many members present who thought that that was the standard height when the car was light. There were however a sufficient number of votes to make that the standard when empty. It certainly is much easier when making a change to raise the height of the car than it is to come down. Those railroads whose standard height is lower than what is recommended by the committee can very much easier go up than those which are higher can come down. Since the standard was adopted there has been a great increase in the capacity of cars, and I have not the slightest doubt that if we were without a standard to-day, and the question should come up, that the standard which would now be adopted by the members of the Association would be a higher one than 2 feet 9 inches. I feel satisfied from my investigation that the recommendation we propose will be acceptable to a large majority of the railroads of the country, and will do more to bring about a much desired uniformity than can be accomplished if we stick to what we did fourteen years ago.

MR. ADAMS—Mr. Forney is very kind to try to smooth over the troubled waters ——

MR. FORNEY—I receive a salary from the Car-Builders' Association for doing just that thing. (Laughter.)

MR. ADAMS—But he is losing sight of one fact which is a very important one on railroads, and you will find that when they get waked up on it they will bear that in mind. He has not touched on it. He says it is easier to raise a car up than to lower it. That depends on circumstances entirely. If you were one of those fellows who have to heave stone up on a car, you would want to have it as low as you could get it. It is a very desirable thing to get a car-body just as low as possible, particularly flat cars, and if you have your train of flat cars considerably lower than the others, you have quite a difficulty to get your draw attachments so they will run in line. Everybody knows that it costs a good deal of money to lift a thing a foot, and the operation of lifting a good many tons a foot higher than is necessary is expensive in muscle if in nothing else. If Mr. Forney had the cars to load he would like to have them down lower, and the opinion of the generality of railroad men, as far as my experience goes, is that it is desirable to have our loads as near to the ground as we can get them. There has been a great deal of fault found with the Boston & Albany, because they draw an inch or two too high. We had difficulty in bringing our cars down to the standard, be cause we used a truck that did not admit of its coming down without some trouble. Time and time again lines have found fault with us because we were too high. At the present time we draw a little too high. We

report ourselves at 33 inches, but we are a little higher. We mean to conform to standards that we have voted to adopt, and we did in the Ames draw-bar, and there is where the trouble comes up with Mr. Buchanan ; because he happened to get wrong he wants everybody else to adopt his standard.

On motion of Mr. Cloud, the Convention adjourned till three o'clock, in order that the members might have an opportunity of seeing the brakes.

AFTERNOON SESSION.

The Convention was called to order at 3 P. M.

THE PRESIDENT—The continuation of the discussion of Standard Dead-blocks is in order.

MR. WOOD—I would suggest that we take up the recommendations of the Committee on Standard Dead-blocks, and vote on them singly ; that is, as to whether they shall be submitted to the members of the Association for approval by letter-ballot, taking up each recommendation separately.

The motion was carried.

The Secretary read the first recommendation, which is as follows :

"1. That the standard height of draw-bars for freight cars, measured perpendicularly from the tops of the rails to the centre of the draw-bar, shall not exceed 2 ft. 11 in. when the car is empty, nor be less than 2 ft. 9 in. when it is loaded."

MR. WALL—I move that it is the sense of this convention that this question be submitted to the Association for letter-ballot.

MR. BRIGGS—I second that.

MR. CLOUD—I should like to add, if the mover and seconder would accept it, that it is the sense of this convention that this is a proper standard, and that the question be submitted for letter-ballot.

MR. WALL—I will accept that.

MR. HITCHCOCK—There are many members who perhaps have now gone over to see those trucks, and who are very likely interested in this subject of the height of draw-bars, and it is of great importance, in my opinion, especially to the New England roads, that the height of draw-bars should not be changed. On our road, and on all lines connecting with us, the cars are uniformly to that height. Now, to ask us to change this again involves so much expense that I should seriously object to it. I think the matter ought to be well discussed before we attempt anything of that kind. I should like these men from the East to be heard. I should be glad to see the matter postponed until they return.

MR. FORNEY—I would like to ask Mr. Hitchcock how many cars his company owns.

MR. HITCHCOCK—I do not think that makes any particular difference how many cars the company owns. I would like to ask you in return if it makes any difference in the principle involved whether I represent a large or a small road.

MR. FORNEY—I think it would make a difference in Mr. Hitchcock's argument, in this respect. He says it is inconvenient for his road and other New England roads to make the change. I say that the Erie and Baltimore & Ohio and Pennsylvania roads might say that it would be much more inconvenient for them to come down. I will admit that it will be inconvenient for Mr. Hitchcock's companies to make a change; but the difficulty is here, that to a great many other roads owning a large number of cars whose standard is now higher than 2 feet 9 inches, it is much *more* inconvenient to change than it would be for the New England roads to do so.

MR. HITCHCOCK—I understand that in this convention we come together to adopt a standard, and it is generally expected that when a standard is adopted each road will carry out the standard. Now, we adopted a standard in 1872, with which the roads you speak of are all familiar. They have been working their cars up above the standard, and they ask us to make this change. There seems to be something that is radically wrong in this. The Boston & Albany, the Hartford & New Haven, the Vermont Central, the Connecticut River, the Boston & Maine, and, indeed, all the roads of the East—to those roads it is a matter of almost as much importance as it is to the Pennsylvania, perhaps, and any roads that you mention. I should like, at least, to have some of the Eastern members present before this action is taken. I think it is decidedly unfair in the absence of these parties to take a vote on this question.

MR. FORNEY—To meet that difficulty I would move that it be postponed till to-morrow.

MR. WOOD—I rather object to the manner in which it is put. As I understand, the meeting was postponed till 3 o'clock. It is now some twenty minutes after three. If those gentlemen he speaks of who are not present want to be present at the discussion, and he makes that the ground of his request, that is very good; but when he says that to take it up is unfair, I object to the expression.

MR. MACKENNA—I object to this altogether. We have been to a good deal of expense on our road to bring the cars up to this standard. We own about thirty thousand cars, and we do not propose to alter again, and I shall vote against it.

MR. CLOUD—The matter now is in a varied condition. Cars vary from thirty-three to thirty-five and five-eighths, and it does not at all follow, if we adopt this resolution, that in order to conform to the standards either the New England roads or any other roads will have to put their draw-heads up to thirty-five inches, but simply put them up a half inch, perhaps, if they wish at once to conform to the Master Car-Builders' standard, because the new proposition is that the height shall be not higher than thirty-five and not lower than thirty-three, and a half-inch raising of the

draw-heads might be sufficient to meet this requirement. Further, I do not consider that it is important that they should go to work and change the cars that are now on the road, or take them to the shop for the purpose of changing, but only change them when it would be no expense, and especially that they should build new cars to the new standard. In other words, that we should grow into uniformity, as that is the only way we could do it anyway, since none of us are going to spend a great amount of money in bringing our old equipment to the new standard—and simply that we shall follow this in the building of new cars, or in the application to old cars, when it can be done without additional expense. Therefore, it seems to me that Mr. Hitchcock, in behalf of the New England members, is overdrawing the question; and I do not know whether he thinks that thirty-three inches is a better height to build new cars to than thirty-three and one-half inches, which is all, perhaps, they might have to build them to under the new conditions. Neither do I know if the gentleman from the Delaware, Lackawanna & Western Railroad understands it in this way, but I think it is quite proper that they should look at the question in this light, and make their strictures and criticisms of the propositions from that standpoint.

MR. HITCHCOCK—I was present at Richmond at the time the height of draw-bar was established at 2 feet 9 inches. The matter at that time was thoroughly discussed. It was argued then as one of the principles that cars should be built upon, to run the weight of the car as near the rail as possible, and I do not think those principles have changed. I think it desirable now that our cars should be run as near the rail as possible, with less leverage for the track and so forth; and at that time the Western members objected to that height. The New York Central objected to that height. Many of their cars had draw-bars away down, and the end beams of their trucks were made dishing under, so that the draw-bars could be carried down; and they objected to it very much. Mr. Garey was a member at that time and was present; but the point was finally yielded and that height was established. Now, we have been working for fourteen years in trying to get a standard. Here is one standard adopted fourteen years ago, and I suppose all companies have been laboring for that end to establish one thing as permanent; and it is quite common with outside parties—men that are not interested in railroad matters, perhaps, but mechanics—to say that the principal thing railroad people have to do is to get the same height of draw-bars. Now, I say again, after working fourteen years with 2 feet 9 inches as a standard, I say it is folly to-day to give it up and establish it at 2 feet 11 inches because all the Eastern roads have made those requirements, and because a few Western roads have gone a little higher. I say it is unfair, as long as we have obeyed the rule, to ask us to-day to come up two inches more; and I think that members from the East should be here to take part in the discussion and understand it thoroughly in all its bearings. They may find this matter all settled while they have gone to further the interests of the Association in the matter of brakes, etc.

MR. GAREY—I think Mr. Hitchcock probably loses sight of the small number of cars that the Eastern roads send out into the world at large ; that is, what we might term very properly, tramps. On the cars that they keep at home and use on their own roads, it is immaterial to the other roads what height of draw-bar is used. It is only those cars that travel all over the country that all the roads are interested in the uniformity of, and I most decidedly, although one of the members who established the old standard, shall vote in favor of having it changed. I believe in progress—moving forward—and with all due respect to the Eastern members, I certainly hope that they will not throw any stumbling block in the way of progress in any shape or manner or under any circumstances. I do not think, if they knew just the position they were placing themselves in, that they would do it.

MR. HITCHCOCK—I understand, Mr. Garey. We do not run any cars over the New York Central road, but we do run New York Central cars over our road, and we do run line cars from the West all through on the line, and we have to fix them up in our trains ; and, of course, it becomes a matter of importance whether the draw-bars are of the same height. You have a car loaded that is two inches higher than the standard, and one loaded that is at the standard when it is light, and it makes quite a difference, and we are obliged to run their cars whether they run ours or not, so that they are mixed up all the while.

I think it affects us fully as much as it does the West, but Mr. Garey loses sight of the point that we have been working at 2 feet 9 inches as a standard for fourteen years. Now, we are going to throw fourteen years' work away to come up to a standard of two inches higher. I say the idea is ridiculous, as far as the philosophy of the operation is concerned.

MR. MACKENNA—What is to be gained by raising this draw-bar ? Will any of the gentlemen tell me what is to be gained by it ? Ever since I built cars, and that is about thirty-four years, our practice was to keep our cars as low as possible. Now, what is the object to be gained by that ?

MR. CLOUD—I have already spoken twice on this question. If I may be permitted, however, to answer the query, I will do so ; otherwise I believe I have no right to speak again. I would say, as I understand this question, there are many trunk lines of railroad over this continent which have been competing for traffic, and at very small rates for freight —very low rates, and the reduction in transportation expenses has been brought about by increasing the capacity of cars. I think that so far as the New England roads are concerned, perhaps they have not felt this so much as many of the Western and trunk lines from East to West have felt it. I do not know why the Delaware, Lackawanna & Western gentlemen have felt it so much ; but it seems to me that we may either fossilize and continue to do what we thought was right when we were boys, or we may keep up to the time, recognizing the new conditions that prevail and make our constructions to meet them. The development of freight traffic across the continent has increased the capacities

of cars, which necessitates a larger space for the trucks, a larger space for the under-framing of the cars, and larger dimensions in every way, to build cars of the capacity now required ; and while 33 inches to the centre of the draw-bar was perhaps a proper standard from an enlightened standpoint in 1872, in the present year, 1886, we are only following the lead of a large number of cars now traversing the continent, to change our standard so that it is adapted to the new conditions. I have not yet heard any allusion to the point which I have recently made, and it seems to me that the members neglect that fact, that there is no contemplation in this resolution to influence them to put their cars up to 35 inches ; that is not the idea at all. It says "that the height of the draw-bars shall not exceed 2 ft. 11 in. when the car is empty, nor be less than 2 ft. 9 in. when the car is loaded." Well, if a car is now built so that it is 2 ft. 9 in. when empty, the only requisite to comply with this resolution would be to put it up so much as the spring compresses under the load, which is probably half an inch ; and even if there were not one car on the tracks to-day changed, and new cars were built so that they would not go below 2 ft. 9 in. when the car was loaded, I would say we were carrying out with a fair prospect to ultimate increase in safety to trainmen if we simply build the new cars enough higher so that they should not go above 2 ft. 9 in.

MR. MACKENNA—Will the gentleman please answer—what are the height of the draw-bars on the Pennsylvania road ?

MR. CLOUD—Nominally the draw-head centre is 35 inches from the top of the rail, and has been for years. Practically it is about 34⅛ or about 35¼.

MR. MACKENNA—You want us to come up to you.

MR. CLOUD—We do not care whether you do or not. We want you not to send us a car lower than 33 inches, or we will not send you one below 33 inches or above 35 inches.

MR. MILLER—I will ask Mr. Cloud why they did not adopt the standard recommended at Richmond ? He says they have been always——

MR. CLOUD—They have been for a long time, I should say.

MR. MILLER—Is there any particular construction of the truck or body that requires that height ?

MR. CLOUD—We could not well go below that now with proper strength below.

MR. MILLER—I feel a good deal like Mr. Hitchcock, that the adoption of the standard should be left intact, although I am not averse to improvement, if it can be shown that it is an improvement. I know that a great many of the western roads have tried to conform to that standard. Our officers, if we change it from time to time, will say—"you have adopted a standard, now you have changed it ; what have you accomplished ?" Mr. Garey says that the local cars need not be a standard height if you do not please to have them so. If that is the case where does your safety come in in coupling cars ? I say that the

local cars should be as near the standard height as any through cars. I do not want to oppose any improvement, but I want it to be shown that it is an improvement before we change the standard. My opinion is that a good many trucks on these roads have a good deal to do with the height of the car. We must admit that the lower we keep our cars to the track the better it would be for the roadway and the hauling of the trains. The New York Central gives us a list of cars they will not receive if they exceed a certain height. I do not want to be understood as opposing an improvement, if it is really an improvement.

MR. RHODES—I think that this matter of standards is one that the Association ought to give a good deal of attention to, and one which they do give a very little attention to. But as they give so little attention to standard, they ought to be very particular about changing anything that the Association has adopted. Our Association has increased in membership a good deal recently. We have got a new element in. I think that a new element is very apt to make changes. We see that on railroads; when new officers are put in, there is nothing good on the road; everything has to be changed; and we do not want to get in the same way in this Association. I would, before voting on the amendment which is before the house, want to have a good deal more time to consider whether this is the best recommendation we can make. I would be willing to submit it to letter-ballot, but I am not willing to say this is the best thing to do. There is a wide range between 33 inches and 35 inches, that is to say, 33 loaded and 35 empty, and one thing we should want to consider would be whether we cannot narrow that limit; for instance, if those who have conformed to the 33-inch standard, if they would be willing to go up a little, and will those who have a higher standard be willing to come down a little. If some companies have made a change to meet the Association's standard, as has been stated by some of the members, they want some excuse for their officers as to why they should change again. I should, therefore, vote against that being the expression of the Association that it is the best thing that can be done to use the 2 foot 11 inch empty and the 2 foot 9 inch loaded.

MR. VERBRYCK—There is one point that occurs to me in this discussion that would make me go against the proposed change. We are largely interested in overland traffic on our road, and we are building cars for some classes of freight that we have got to build just such a height exactly, to get them across the Continent. The Central Pacific Road will not receive a car over a certain height, and we are building cars, as I say, for a certain class of traffic. If we raise those cars which have been built especially for that purpose one-half an inch, they will be rejected. I suppose Mr. Rhodes knows what their standard is. We are building another class of cars for furniture and for agricultural implements, wagons, and so on, fourteen feet high from the top of the rail to the top of the running-board. We have a large number of those cars, and if they are half an inch higher than that, our connections will not take them from us. That is the only reason I would oppose any change in the standard height of draw-bars.

MR. SNOW—I am opposed to any change in the height of this draw-bar, as ours are all up to the old standard now. There are a good many cars I suppose we might build higher if we thought it desirable to alter this ; but I do not see the use of it. I cannot see why there is anything to be gained by it. I think it is a pretty good height as it is ; therefore I shall vote against making any change.

MR. SUTHERLAND—I should certainly be very much opposed to making any alterations in the standard draw-bars from what we have had in the last number of years. We have been bending all our energies to come into a standard. We have accomplished that at the present time, and now to recede from that would be very unwise indeed. Another thing I have in view at the present moment—in the State of Michigan whenever any one happens to have his fingers caught in a draw-bar, the first thing he does is to find out what is the height of the draw-bar. The Master Car-Builders' Association has given out that the height of the draw-bar shall be 2 feet 9 inches from the top of the rail to the centre of the draw-bar ; consequently, the very first thing he does is to measure that draw-bar. It is a very serious matter to us. We have been all along trying to fulfill the engagements that have been set upon us.

MR. FORSYTH—I am not at all opposed to progress if it can be shown that it is a progressive movement ; but I do not think it has been shown that there is any improvement, mechanically, in having a draw-bar 2 feet 11 inches, over one that is 2 feet 9 inches. We have tried conscientiously for a number of years to follow the Master Car-Builders' standards. We have 20,000 cars equipped with the Master Car-Builders' axle, journal box and bearing, and standard height of draw-bar, and now we are asked by a number of roads which have never adopted these standards to change that to satisfy them ; and for my part I am not willing to do it, and I am pretty sure that our road will not be willing to do it.

MR. ADAMS—I would like to say another word about it. Mr. Cloud apologizes for speaking about it twice ; I shall have to do the same. I won't say but a word. Mr. Rhodes said that the standards had not been followed very closely that have been adopted by the Association ; but evidently there has been an earnest effort on the part of the railroads, with few exceptions, to bring their cars into uniformity in regard to height ; and it was looked upon, as has been said here by the Railroad Commissioners, and railroad men almost universally, that it was one of the most important things we could talk about to get our draw attachments to conform to each other as near as possible. Now, then, the evidence is pretty clear that there has been a pretty general effort to get to 33 inches, and it does seem to me that I have not heard a word of argument that would convince me that it was advisable to make a change. Mr. Cloud refers to the idea that we have got to get our cars up on account of the increased demand for heavier loads. I fail to see that point at all. There is no difficulty to build a car to carry any amount of tonnage and get it very much lower than it is now. We have

got cars that carry 40 tons, or will carry 40 tons easily, that are a foot lower. Flat cars are a foot higher than the standard height, and we put our draw-bars on top to make them draw in line. Now, the proposition that we cannot build our cars strong enough, it seems to me, is an entirely false position, and I do not see any occasion for that argument at all. When we come right down to the point it is simply this—from my standpoint—I am simply stating how I view it: There are a few roads that draw higher than the present standard, and I might say, with Mr. Rhodes, that there is a new element come into the Association that wants us to conform to their ideas. That is the way it looks to me, the whole sum and substance of it.

THE PRESIDENT—Are you ready for the question?

MR. ADAMS—What is the question, Mr. President?

THE PRESIDENT—The motion is that this first section be recommended to the Association for letter-ballot.

MR. MACKENNA—If it is in order, I would like to make an amendment to that, and that is to put this over until these Eastern men come forward.

MR. ADAMS—I move, Mr. President, to lay it on the table indefinitely.

The motion to lay on the table was carried.

THE PRESIDENT—Now we will take up the second section.

The Secretary then read the second recommendation, which is as follows:

"That the height of the dead-blocks, measured from the tops of the rails to the centre of the blocks, be not less than 3 ft. 5 in. when the car is loaded, or more than 3 ft. 9 in. when it is empty."

MR. SNOW—Does not that follow the draw-bar? Is not that the same proportion?

THE PRESIDENT—I think it is.

MR. CLOUD—I think it is very important that we should have some limits to the heights of dead-blocks; and inasmuch as it seems to be the sense of this standard that 2 ft. 9 in. as the height of draw-bars is the correct one, I would move that the figures in the second section be changed to 3 ft. 4 in. and 3 ft. 8 in. respectively; that is, reduce each one inch; and that it be submitted to letter-ballot to be decided by vote the regular way as to whether it shall be considered the standard of the Association to have the height of the centre of the dead-block between 3 ft. 4 in. and 3 ft. 8 in. in the different conditions of lading.

THE PRESIDENT—Gentlemen, you have heard the motion of Mr. Cloud. Are there any remarks?

MR. ADAMS—If I understand this, this is really a part and parcel of the other matter. You can hardly do one without you do the other. We have already, as has been said here, repeatedly fixed the standard height of the draw-bar and the dead-wood, virtually if not absolutely.

The vote stands on the record now that it is three feet from the top of the rail to the under side of the dead-block. The dead-block is to be eight inches wide, which would make it three feet four inches to the centre of the block. Now, this is being done by very many of the roads; it has been a fixed point that has been recognized just as much as the centre of the draw-head. Now, I can hardly see how we can consistently vote any differently from what we voted on the other. These two votes are intimately connected, and they cannot be separated very well with any consistency. I will admit that a man might put the dead-block clean up to the top of the car if he was a mind to, but he would be considered a fool if he did it. The aim would be to get them as near in line as possible. I make the motion, as I did before, to lay this matter on the table.

The motion was carried.

The Secretary read the third recommendation, which is as follows:

3. That when double dead-blocks are used, that their vertical height and their width, measured crosswise to the track, be each 8 in., and their thickness, measured lengthwise to the track, be 6 in.; that they each consist of a casting as represented by the drawing submitted with this report.

MR. GAREY—I move that it be submitted to letter-ballot.

The motion was seconded by Mr. Demarest.

MR. FORNEY—I do not think that the arguments advanced by the gentlemen against the other recommendation hold against this, because this is substantially the same as the standard which has been already adopted. There is a little uncertainty, though, as to whether the standard dead-block is intended to be six or eight inches thick. It now becomes a matter for the members to determine whether they will adopt this casting as a standard.

MR. CHAMBERLAIN—As I understand, if this is submitted to a ballot and defeated, it would still remain eight inches square, with a doubt as to its thickness.

MR. FORNEY—Yes; it would be about eight inches square in either case; but if this measure should be defeated, it would leave it somewhat uncertain whether it was six or eight inches thick.

MR. CHAMBERLAIN—If it should be defeated, it would leave it as it is now?

MR. FORNEY—Yes, sir.

MR. ADAMS—It is simply a question whether the block is six or eight inches thick?

MR. FORNEY—Yes; and if you approve of that, then this casting will become a standard.

MR. HITCHCOCK—I would like to inquire if that is patented?

MR. FORNEY—Does Mr. Cloud know about that?

MR. CLOUD—I never saw this before; I don't know anything about it.

MR. FORNEY—It is almost the same as you use on your road.

MR. CLOUD—There is no patent on ours.

MR. HITCHCOCK—The question I asked was whether this was patented or not. I did not know but that somebody had patented this particular casting.

MR. FORNEY—I made the drawings myself and I have not patented it; if I should, I will make it public property.

MR. MACKENNA—There is another thing about this—it is proposed to make this block eight inches thick. Here we project our draw-heads an inch and a quarter beyond our dead-wood.

MR. FORNEY—I think Mr. Mackenna is mistaken. It is only six inches thick.

MR. MACKENNA—It says here eight inches.

MR. FORNEY (reading)—"When double dead-blocks are used, that their vertical height and their width, measured crosswise to the track, be each eight inches, and their thickness, measured lengthwise to the track, be six inches."

MR. MACKENNA—You are right, sir.

MR. GRIEVES—We are not using any dead-woods at all, and we merely gave these figures, 44½, in case we should use a dead-wood. This will not affect us in any way.

MR. FORNEY—I am speaking oftener than I have a right to on this question, but as I drew up this report, I suppose the members will excuse me. Mr. Cloud spoke this morning about an arrangement they used on their dead-block, of casting a hole in it for putting in a pin. I did not embody that in the drawing. I think it would be a good thing to add to the drawing. Will Mr. Cloud explain that?

MR. CLOUD—I would say that some time ago we adopted a casting that this has degenerated from, and put it on originally, I suppose, a hundred cars, and on inquiry from trainmen on different divisions, found that a vertical web in the middle of the casting was an objection, simply because they had been used to having them without a web, and they could lay a pin on the lower part. I do not suppose it applies to any other company than ours. I state it because Mr. Forney asked me to. I do not think it is at all pertinent to the convention.

MR. ADAMS—I suppose if any parties found it convenient to put a pin-hole in there they could adopt it?

MR. FORNEY—We would pass a resolution allowing Mr. Adams to put a hole in there, at any rate.

MR. ADAMS—I would do it any way. I would say that nearly all the roads that adopted the Ames draw-bar are putting a hole in there.

The motion to submit to letter-ballot was carried.

The fourth recommendation of the committee was read by the Secretary, and is as follows:

4. That when a beam, attached to the end-sill, is used for carrying the dead-blocks, that it be made 36 inches long, 8 inches vertical depth and not less than 4 inches thick.

MR. ADAMS—Why does the committee want it 36 inches long, when the outside of the block is to be only 30 inches? Is it necessary, or is there anything important in extending that 3 inches outside of the block?

MR. FORNEY—Nothing important; only it is less likely to split if it projects beyond the timber.

MR. ADAMS—I accept the explanation. I did not know but that there might be some peculiarity about it.

THE PRESIDENT—The Secretary has read the section. What is your pleasure?

MR. DEMAREST—I move that this be submitted to letter-ballot.

The motion was carried.

The Secretary read the fifth recommendation, which is as follows:

5. That in other respects, double and single dead-blocks be made in conformity to the standards heretofore adopted by this Association, as shown in the drawings submitted with this report.

The Secretary added—I do not think it is necessary to submit that to letter-ballot.

MR. HITCHCOCK—I move that that be adopted by acclamation.

THE PRESIDENT—I do not think it is necessary to have any motion to that effect, as it has already been adopted by the Association.

MR. HITCHCOCK—I withdraw my motion.

The Secretary read the sixth recommendation, which is as follows:

6. The committee also recommend that the nuts on the ends of the truss-rods be seated in cup washers, so as not to project beyond the surface of the end-sill, and that the space between the ends of the cars be kept as clear as possible of bolt heads or other objects which are liable to catch the clothing or injure those engaged in coupling cars.

MR. ADAMS—I suppose any one would understand readily that if these cup washers are let into the end-sill it weakens the end-sill so much, or else subjects the parties to thickening the sill up to the additional amount.

MR. SNOW—I do not see that it is necessary to cut this into the sill at all. Have a nut washer, have it cupped so as to take the bolt or the head, whatever it is, and set on top of the sill. I have seen a good many that way. There would be no nut sticking out to catch the men's clothing.

MR. HITCHCOCK—I suppose this matter is intended to do away with anything that would come in contact with parties between the cars.

MR. LENTZ—I move that the recommendation of the committee be adopted.

The motion was carried.

MR. CLOUD—In connection with this subject, I have one other matter which I would like to submit to the convention, to hear whether they would like to have it go before the members for letter-ballot. I would move that with the other matters which are to be referred to letter-ballot, this be included: That the face of the draw-head shall not extend beyond the general face of both dead-woods, or beyond the buffing face of single dead-woods, when the draft-spring is fully compressed by buffing.

The motion was seconded by Mr. Lentz.

Mr. GAREY—I move to amend that by striking out the single dead-wood. It will be impossible to get your pin in the draw-bar if it is thrown under.

MR. CLOUD—The object of this is to compel parties, if they want to comply with the standard, to gouge out the centre, so that the dead-wood will be a dead-wood. It is just to meet that condition of affairs that I have proposed it. In many cars that come on our road, the dead-woods are of no account. They do not engage, and it is to meet that case that I have proposed it.

MR. SNOW—I did not quite understand Mr. Cloud when he stated that.

MR. CLOUD—I say that some blocks put on the ends of cars do not act as dead-woods at all, and our drawing shows the centre gouged out.

MR. SNOW—I mean the resolution.

Mr. Cloud read his resolution again.

MR. SUTHERLAND—How thick would Mr. Cloud have that single dead-wood?

MR. CLOUD—I would not use one; I would use double ones.

MR. SUTHERLAND—That is where we are of a different opinion. I would not use a double one, if it was in my power to prevent it, or allow any one else to, if I could help it. Most of the western roads' draw-bars project about 9½ inches out from what we call the single dead-wood, which is a piece of timber made 20 inches long, 10 inches wide, and 5½ inches thick; and to put on a single dead-wood, according to the drawing there, looks to me so preposterous, that I can hardly believe it was a sane man that ever proposed it.

MR. DAVENPORT—Would not this change a standard already adopted by the Association?

A MEMBER—I wish to second the amendment proposed by Mr. Leander Garey.

THE PRESIDENT—What is Mr. Garey's motion?

MR. GAREY—To leave out the single dead-block in the resolution. I think the idea is correct, and that we should conform to it, if we can without infringing on our standard already adopted, that the dead-woods should come together when the buffer springs are exhausted; but I do not see how it possibly can be done with the single dead-woods, unless you cut them in two and make double dead-woods of them.

MR. CLOUD—My idea of that is that it will rule out th single dead-woods. It is outrageous to run cars over the cou expect them to go into respectable trains with a battering ram all the draft arrangements out of good cars without any way shocks, and I think that we ought to do something to recognize have it corrected.

MR. SNOW—If they would make the draw-gear strong would not be any more likely to drive that out than a single o the two come together.

MR. MILLER—The laws of some of the States rule tha tirely, unless the draw-bar is automatic. The law of the State igan would rule that out ; you can get a verdict against a compa time that a man is hurt with a double dead-block.

MR. McILWAIN—Is not this a shorthand way of forcing t dead-wood men to use the double dead-wood ? Look out for yo

MR. CLOUD—It is in the hands of the convention. I have plainly what the object is.

MR. COOK—All our cars have the single dead-wood. I w dare to put on a double dead-wood without automatic coupl think it would be dangerous.

MR. WALL—What would be the advantage of Mr. Cloud if the amendment was carried ?

THE PRESIDENT—I think it would kill it; that is a amendment is in order.

The amendment was carried.

MR. CLOUD—I will now withdraw the motion if the seco consent.

MR. ADAMS—You would have saved a good deal of bad you had done that before. (Laughter.)

MR. LENTZ—I hope to see the day when they will all vot resolution.

THE PRESIDENT—We will now discuss the freight-c which was postponed to give the members a chance to see th under these cars. The discussion of that will be in order.

MR. ADAMS—I went up to look at the trucks and I found t with trucks under them of different patterns. I did not hear said by Mr. Miller in his report, about the third car, and I noti is considerably different from anything represented on the bl I would like to hear his explanation of that truck.

MR. MILLER—I do not know anything about that truck.

MR. PRESIDENT—That is not a part of the report at only under a Michigan Central car for the Master Car-Builders t

MR. ADAMS—I suppose Mr. Miller did not think ther merit in it.

MR. MILLER—You can draw your own conclusions in that. I have nothing to say in regard to its merits or demerit patented article, I believe.

MR. ADAMS—I looked at that truck lately, and though I did not give it a careful examination, my impressions of it were quite as favorable as of either of the others.

MR. GAREY—What objection does the committee think there would be to including the centre plates, as a standard?

MR. FORSYTH—I would reply to Mr. Garey that I do not know of any objection, except that the Pennsylvania once showed it on a standard truck which they thought of adopting, and that they abandoned it; and that we find that all other practice, as reported to us, shows them the other way, which is a pretty good reason for placing them as we did. I have a statement here showing about the average cost of the trucks as built by the Chicago, Burlington & Quincy Company. The material includes four 33-inch wheels, at $9.35, and the total cost of material is about $110, roughly, and the labor, $15, making the cost of one truck, $125. That is the outside price. I suppose they could be built for $120, perhaps less.

MR. SNOW—I was down there to see those trucks, and I was favorably impressed with some of their points; others I did not like very well. Some I liked better than what we have had, though I think they should be on wider iron. I think it would be better to be 4 inches than 3½. The truck bolt should be an inch and a quarter to carry these increased loads that are now carried. I think these are an inch and an eighth. I was told that they had broke down one or two of ours. Ours were an inch and a quarter. It cuts away so much of the iron to get the bolts through. Our bolts are only an inch, and they ought to be more. Another thing I object to is that the hanger-pin is in too far in the arch-bar. It should be out farther. I have drawings of an Illinois Central truck here.

THE PRESIDENT—The Committee on Freight Car Trucks have gone to a great deal of trouble and have spent a great deal of time in getting up these plans, and I think that it is due them that we should, all of us, so far as possible, express our opinion on it and try to come to some conclusion on this. This truck business has been going on now for two or three years, and we ought to come to some conclusion as to whether we are going to submit that truck to letter-ballot, or what we shall do with the report of the committee.

MR. GRIEVES—I agree with Mr. Snow in regard to the arch-bars, that they should be four inches. We have had considerable difficulty on our road in regard to arch-bars breaking down. When it comes to adopting a standard truck—which looks to me like one of the impossible things, as we all have our own standard—it would be almost an impossibility to get all the principal roads of the country to give up their own standard. But I know the Pennsylvania are about adopting a standard; at least I have heard that they are. The Baltimore & Ohio have recently adopted a standard truck. Yet it seems like one of the impossibilities to get roads to adopt a standard truck.

MR. CLOUD—It seems to me that the committee on the truck

question has done a good deal of good work; but I cannot see what we want with a standard truck. We could approve of their truck as a good job. I presume nearly all of us think it is a good truck; but I doubt if there are many representatives of roads here who want a new truck for 44,000-pound cars. Our old truck, that was built for 12,000-pound and 15,000-pound cars, is good enough for 40,000-pound cars. We are building a truck for 60,000-pound cars, and this is not represented by the committee as being suitable for anything above 40,000 pounds. I cannot see the advantage of having a standard about a truck, except for the parts that wear or break—the journal bearings, perhaps, the boxes and brake mechanism and rubbers. Of course it is important to have a standard, in order to reduce the number of parts that have to be kept in stock in different places. We might approve of this truck without submitting it to letter-ballot, and that perhaps there would be more of them built by parties who need a better truck for 40,000-pound cars than otherwise, and that it would result in economy to them. I presume there are very few companies which would build trucks of that kind for 40,000-pound cars. For cars of heavier capacity—50,000 pounds or 60,000 pounds—we build trucks of 4-inch truck sides and inch and a quarter column bolts.

MR. GAREY—I move that the trucks recommended by the committee be submitted to letter-ballot.

MR. WALL—I second that motion, Mr. President, with the understanding that this subject shall be again considered by—it is hardly fair to say the same committee—but possibly some other committee, with a view to adapting form of truck to cars of 60,000 lbs. capacity. I think it would be well to have this truck go out and have people discuss it. It has a great many good features, and it might bring about uniformity. In the meanwhile we ought to be considering a truck for 60,000 lbs. capacity. I second the motion, with the intention of asking the committee on the subject to engraft among other subjects a committee for a 60,000 lb. truck.

The motion was carried.

THE PRESIDENT—Perhaps it is not exactly understood. The recommendation of the committee is as to the freight trucks shown on sheets 1, 3, 4 and 6. Is that understood? If that is understood, it is all right.

The next thing in order will be the report of the committee on the comparative advantages of two methods of constructing freight cars, with and without platform timbers or end-sills, projecting from the end of the car.

This report was read by Mr. Wall, and is as follows:

REPORT OF THE COMMITTEE UPON END PLATFORMS FOR FREIGHT CARS.

Your committee upon the comparative advantages of the two methods of constructing freight-cars, with and without end platforms, beg leave to state that no new facts have been developed since their last report. At that time they gave a careful resumé of the advantages of each of the two methods of construction, and have not, in replies received to circulars sent out this year, discovered any reasons that would warrant them in altering their statement.

The Committee feel that they completed last year the task assigned them, to-wit: To report upon the "*comparative* advantages of the two methods of constructing freight-cars, with and without end platforms," and as the members of the Association entertain two diametrically opposite opinions, one in favor of, and the other opposed to, cars with end platforms, it would seem that the object of the Association would be best attained if the scope of the committee were enlarged, and if they were empowered to submit plans giving two standards for the end floor framing of freight-cars.

In the discussion of these two standards, the comparative advantages of cars with and without end platforms would be established, the original intent of our committee would be accomplished, and the Association would have a standard for each of the two forms of construction.

EDWARD B. WALL.
W. F. TURREFF.
B. K. VERBRYCK.

On motion of Mr. Hodge, the report was accepted.

MR. FORNEY—I move that the scope of the committee be enlarged, and that they be empowered to submit plans giving two standards for the end floor framing of freight-cars.

MR. GRIEVES—I did not quite understand that.

MR. FORNEY—The committee, in their report, suggested that the scope of the committee be enlarged, and that they be empowered to submit plans giving two standards for the end-floor framing of freight-cars. Now, as the committee ask to be empowered to do that, I thought it would be only a matter of courtesy to make the motion.

MR. CLOUD—I do not see why we should want two standards. I do not see why we should have any. I think it would be much better if they would ask to be discharged.

MR. ADAMS—I would like to ask why Mr. Cloud objects to two standards ?

MR. CLOUD—I do not object to that, but I do not see what is to be accomplished by it.

MR. ADAMS—I do not see why we should not have two standards where it is utterly impossible to agree on one, or why we should not have two standards of that thing as well as two standards of other things. I asked the question because you proposed two standards of other things.

MR. CLOUD—I proposed two standards of brake-shoes, because they wear out and have to wear out. You can whittle a stick of timber down to suit almost any shape. I do not see that the two cases are at all comparable. I have no objections to continuing the committee. I said that more as a suggestion than with any wish to press it.

MR. GAREY—It would appear to me that if we have a plan made of both methods we may be able to evolve out of it a single standard, and that is why I support the motion of Mr. Forney.

MR. WALL—I would like to make a remark in this connection. We were instructed to state the comparative advantages of the two methods of construction. We did that last year and gave every advantage, pro and con, we could possibly think of, and then the committee was continued. This year we sent out another circular of inquiry and received a number of opinions, and some of those opinions were of a character that we considered in our committee should alter the conclusions of last year—that is, should alter the statement that we gave; and there were no new statements developed in the answers to the circular of inquiry of this year; and we thought if we, or some other committee, had the power to submit plans for the floor framing of cars with end-platforms and without end-platforms, that in submitting them they would show at once which plan possessed the greatest advantages, and even if it did not accomplish that end, master car-builders or superintendents of motive power, in future, in making specifications for a new form of car not made heretofore, or new standards for new roads, could refer to standards and they would see a plan—one plan representing the cars with end-platforms and another plan representing them without; and those plans would represent what was approved by the Association in those two different departments. Therefore we think that that would be a benefit to the Association, provided we did not have success in proving that one of them was best. We do not want to be appointed at all. We would just as soon be discharged and have another committee appointed.

MR. CARLTON—I think Mr. Wall is about right in that matter. On the Baltimore & Ohio we have had the end-platform for a great many years. We do not find it just the thing, and we have come to the conclusion that we want a car without an end-platform, and therefore, I would recommend that the committee be allowed an opportunity to discuss both cars.

MR. PRESIDENT—I feel quite convinced myself that most of the Eastern roads, at any rate, that have the ordinary platform, that is, not the projecting platform, would never go to the projecting platform. I would not think of such a thing. I do not see any use in it. I do not know what it is for. The only argument I have ever heard in its favor is, that it is a protection for the men to get down there in stormy weather.

MR. WALL—If the Chairman will give us an hour we will give him some arguments. We do not want to speak to you now because you haven't time.

MR. GRIEVES—I was very much surprised at a part of Mr. Wall's report where he says that no new facts have developed themselves during the last year. I thought a number of new facts had developed, as we reported last year having 22,000 cars with platforms. This year we reported that we had not a car without a platform, and we are building cars in that way now.

MR. WALL—That will be investigated. I have already spoken twice on this subject, but if nobody objects I will go ahead. The Baltimore & Ohio sent us a statement reporting that they had changed, that they were going to build some cars without end-platforms, and then they stated some reasons why they were going to do that. None of the reasons they mention were new; they were already referred to in our report of last year; that is what I meant when I said nothing new was developed.

MR. MILLER—I should be decidedly opposed to having a new committee appointed on this subject, if I was not afraid Mr. Wall would insist upon the truck committee being continued.

Mr. Forney read his resolution again, at the request of the Chairman.

MR. FORSYTH—Is this to be submitted during the current year or to be a report next year?

THE CHAIRMAN—It is simply continuing the committee.

MR. FORNEY—It might perhaps be well to amend this motion so as to make it entirely definite. It is moved that the committee be continued and its scope enlarged, and that it be empowered to submit plans giving two standards for the end-floor framing of freight-cars.

The motion was carried.

The convention then adjourned until the following day.

THE SECOND DAY'S PROCEEDINGS.

The convention was called to order at ten o'clock A. M.

THE PRESIDENT—The announcement of the annual dues will be the first thing.

MR. FORNEY—The Executive Committee at a meeting last night decided that the annual dues should be five dollars per vote.

THE PRESIDENT—I will call for the report of the Treasurer.

MR. KIRBY—Mr. President, it will be necessary for Mr. Forney and myself to have a short consultation in order to prepare that report. We

are so far apart that unless we can get together we cannot make a proper report. Unfortunately, for myself, I was kept away on account of the death of a very near friend of mine, which prevented us getting together before. As soon as the Secretary can spare a little time we will prepare a report for the Association.

THE PRESIDENT—The presentation of the Treasurer's Report will be postponed then.

THE SECRETARY—Is anyone here acquainted with H. F. Snyder? It is desirable to have a memoir of him presented, and neither the President nor Secretary know anyone who is acquainted with him.

A MEMBER—Mr. S. W. Murray is a member of the Association, isn't he?

MR. FORNEY—Yes, sir.

THE MEMBER—He knows him well.

THE PRESIDENT—I appoint as a committee to prepare a memoir of J. G. McCuen, John Hodge and M. N. Forney; and I appoint Mr. S. W. Murray as a committee to prepare a memoir of H. F. Snyder.

The next thing in order is unfinished business.

MR. FORNEY—At a meeting of the Executive Committee, held in New York a short while ago, a matter came up with reference to a standard tread and flange, and the matter was discussed with reference to submitting the former standard presented to the Association to letter-ballot. It is a matter about which some action should be taken. If you will remember, at the last meeting of the Association a tread and flange were voted to be submitted to letter-ballot. That form of tread did not receive two-thirds of the votes, and consequently, was not adopted. The question is now as to what had better be done—whether to modify that form, or to refer the same form back again.

MR. LENTZ—It might be well to state to the convention the reason why this form of wheel was not adopted. If I understand correctly, a sufficient number of votes were received to adopt this form of wheel, but they were not received in time to be counted. The Constitution requires, I believe, that the votes shall all be in within sixty days. Some of the votes were returned after that time. That, I believe, is the reason why this form of wheel was not adopted.

MR. FORNEY—The statement of Mr. Lentz is correct. There is this to be said about it, however, and it is rather an unfavorable commentary upon the zeal of the members of the Association, that not half of them would take the trouble to vote at all.

I have some copies of the old circulars here which were sent out, and which have an engraving of the standard which was proposed. I think it might be well to distribute these among the members of the Association before the matter is taken up for discussion.

My own impression is that a good many members have objected to the standard proposed on account of the very large amount of taper on the outer edge of the flange, which is three-sixteenths, and the form would be more acceptable to them if that form was reduced somewhat. I

merely state that as my own view of the matter, and submit it to you for consideration.

THE PRESIDENT—What is the pleasure of the Association as to this proposition of Mr. Forney ?

MR. LENTZ—I move that the form of wheel-treads and flanges recommended by the committee at the last convention, and which were then submitted to letter-ballot, be again submitted to letter-ballot for the reasons given by Mr. Forney.

The motion was seconded.

MR. FORNEY—Somehow or other I seem to be made responsible for this form of tread and flange, and yet it is not the form which I would recommend. It is not the form which I did recommend in the paper read at Saratoga. But in this matter it strikes me that it is more essential to secure agreement on some form than to have what some of us may think is exactly the best form. We have submitted substantially this one to the Association twice, but have failed to secure the vote of the majority. Now, I am stating this matter because I think it is proper that the Association should know just what they are doing if they submit it for a third time to letter-ballot. It is certainly unusual after taking the sense of any association twice and having the proposition lost, again to submit it for consideration. I therefore think that before we take this action it should be discussed very fully, and we should get out the views of the members. If more than a third of the votes of the Association are opposed to the adoption of this form of tread, it is simply idle to submit it again. Therefore, I think, it is of the utmost importance that there should be a very full expression of opinion by the members present, and that they should say just what they think. My own preferences have been, from looking into the matter very carefully, for a flange of which the radius of the curve in the corner is a half-inch. We have been splitting on that eighth of an inch for a good while. I do not mean to hang on to that. If we find that we can have a flange with five-eighths radius adopted as a standard more easily than one with a half-inch, it would be better to submit the latter to ballot. If, on the other hand, we could carry one with a half-inch radius and not one with five-eighths, I think it would be better to submit the half-inch. I therefore hope the members will express their views in regard to the matter.

MR. MARDEN—It probably is well known to most of the members present that at the New England Railroad Club we had several discussions in regard to the wheel-tread, the section of the wheel, and two or three different times we got together with us the engineers and roadmasters—the engineers connected with the Maintenance of Way Department and the roadmasters—to discuss the relation of the wheel section to the road-bed, or rather the relation of rolling stock to road-bed. The particular discussion brought out in one of those meetings was the form of the rail-head, and the form of the tread of the wheel, and we found that there was as much variation of opinion in the matter of rail-

heads, and also in the matter of track-gauges and of locating guard-rails, among the maintenance of way men as there was a variation of opinion among car-builders regarding the form of wheel-tread, and also the different gauges of wheels. I find that the engineers, or those in charge of maintenance of way, are inclined to make the rail-heads more round at the part where it intersects with the flange of the wheel than they have been before, and quite a number of patterns of rails are being made with a half-inch radius. Now, it seems to me that whether this throat is five-eighths or half an inch is immaterial to us as car-builders, because a wheel with five-eighths radius would run as well on a rail section having a half-inch radius as it would, perhaps, if they were both half an inch.

There was another thing brought out. We found that although we were using the standard section, by the wear of the patterns, or for some other cause, we were not getting a five and a half inch tread outside, and we therefore adopted a resolution at the New England Club, and I believe it was adopted by the most of the New England roads, that the wheel should be five and nine-sixteenths of an inch, the object of which was to give us a full five and a half inch wheel, outside to outside. Then we reduced the bevel on the outside from three-sixteenths to an eighth of an inch, and the radius on the outside of the tread from three-eighths to a quarter of an inch. Several of the wheel-makers are making patterns to conform to the requirements of the New England roads.

I agree perfectly with our Secretary in saying that I think we ought to have some uniform wheel section, and it is as important that we should have one of uniform diameter as it is that we should have the other parts uniform, and I hope that we may discuss this matter thoroughly, and agree upon some form of wheel section, both as regards its diameter and the other parts of the wheel-treads.

MR. ADAMS—I do not suppose it is any use for me to say anything about this matter at all. I do not suppose anybody will pay any attention to what I say about it; but I will have my say anyway. We talked a great deal about these standards, and, as Mr. Forney says, there was a letter-ballot offered; about one-fourth of the members of the Association sent in their vote, the rest of them are perfectly indifferent. They will not vote either way. Now, I leave it to the common sense of this Association if it is not honest and fair to answer a request of the Secretary to vote one way or another. Everybody has an idea about it. Everybody has a preference. They all know what their opinion is, and they could give it on that ballot, and it ought to be done, and I hope if these ballots are sent out again that every single member will answer.

What I was going to say more particularly was that we are confining ourselves in this to the section of the tread. I am not so particular about the tread, as to its being cylindrical or conical. I do not believe it is so important as a great many do. Neither do I think it is so important whether we have just a half-inch throat there or five-eighths.

I do not think there is one in ten thousand who could ever tell the difference.

MR. FORNEY—Neither do I think it is important.

MR. ADAMS—I thought so. Now, Mr. Marden refers to the New England Club. They advised to reduce that conical part one-sixteenth of an inch, making it one-eighth instead of three-sixteenths. That we did not consider very important. The curve on the outer edge of the tread, I think, would be better if it were a little less than what it is; but I would not turn my hand over either way. I would accept it either way. What I want more than anything else is to have a wheel of a uniform diameter. Everybody knows that our wheels all over the country vary from thirty-two inches up to thirty-three inches, and that, I think, is the point of interest; that is the point that should be before us more than any other point—to get our wheels all made from the same uniform pattern. Let it be uniform in every part, not only in the wheel-tread, but in the diameter, which I consider the most important, although we do not say anything about it in this matter. It seems to me that that is the main point of the whole matter, to get our wheels of certain diameters.

MR. FORNEY—If Mr. Adams will look at the record of standards which have been adopted for several years past, he will see that we decided some time ago what the standard size of a chill-mould should be.

MR. ADAMS—I will admit that; but I do not believe one in ten of the railroads of the United States have changed their patterns.

The President here invited Mr. Barnett, President of the Master Mechanics' Association, who had come into the room, to a seat beside him.

MR. ADAMS—I do not know, Mr. President, that it would be proper to embody that in this point, but if there has been no vote on it it seems to me that it would be judicious, to say the least, to embody that in the ballot, if it is referred to letter-ballot. I should like to hear the opinions of the members on that point.

THE PRESIDENT—I would like to hear an expression of opinion on this matter.

MR. RHODES—The Secretary has asked for an expression from all the members about this section. I will say that our line in voting for this did not vote entirely for the section as recommended. I will state what our objections were. The three-sixteenths taper at the end we have no objections to. The point that we objected to was this sharp point from the cylindrical tread to where the slope breaks off. We did not think that was a good form to introduce in a wheel. We would have voted for this section just as it is, provided that the portion of the tread bearing on the rail instead of being cylindrical had a little taper there. Some may ask, What do you want that taper for? what difference does it make?—the wheels practically get to be straight after running a little while We do not think that is the case, and we have made some

careful tests with wheels with a cylindrical tread and with a slight taper. The tests we made were not in cast-iron wheels, it is true; they were steel-tired wheels; and we found invariably that by coning the tread we got more mileage than by making it cylindrical. That is our reason for having steel tires with coning in the tread, and it then drops off to about three-sixteenths of an inch taper. We would not object to that being one-eighth of an inch, as Mr. Marden mentioned, but we would like to see a coned tread in place of a cylindrical tread.

MR. BISSELL—I rise to make a little excuse for not answering the question with regard to the form of treads of wheels. Being situated as I am, I think it is the business of those using the wheels to answer these questions. We use a great many steel-tired wheels, and from information we have obtained, and from my own observation in the matter, I believe that a conical shape gives better satisfaction than a cylindrical tread. I could cite instances where we had a good deal of trouble with a cylindrical steel tire, which, after they were made conical, did not give us that trouble. I understand that in England, where they use a steel tire universally, or nearly so, on their roads, that they find by experience that a slight cone gives better satisfaction, runs more steadily and wears longer than a cylindrical tread. As you have called for expression of opinion of those present, I give it as my opinion that a conical tread is better.

MR. CLOUD—I would like to say we voted for this form of tread, not that we had any particular preference for it, and we would like it a little better if it had a little coning on the portion which is shown cylindrical. In order to bring the matter before us, I would move as an amendment that the portion which is shown cylindrical, two inches long, be coned one-sixteenth of an inch, and that the remaining one and five-eighths of an inch be coned another eighth of an inch, with a gradual curve between the two lines, and that the radius at the outer edge there be made a quarter instead of three-eighths. I believe that most wheels as they are made would have almost this much coning anyway, and that it would be better for the wheel in many respects. We have no objections whatever to any portion of the flange or the throat. We rather prefer five-eighths to a half, however.

MR. ADAMS—I second Mr. Cloud's motion.

MR. DAVENPORT—Mr. President, we have tried twice to adopt a plan for a section of wheel-treads, and have failed. There is certainly a disposition manifested in the Association to have some coning on the tread of the wheel. I think that is the conviction in the minds of the members generally. There is also a conviction in the minds of a good many men who have given this matter close attention, that a radius in the throat of the flange would give a greater durability to the wheel if it were increased to three-fourths instead of five-eighths. True, some say, if you make your chill three-fourths of an inch radius, in the process of cooling your wheel you will get an approximation to five-eighths in the result. I think there is no member present who has given this matter

close attention, that if he were called upon to say what he would stake his reputation on for durability would not say that three-fourths of an inch radius would give him a greater mileage than any less. When a wheel has sharpened its flange to the prescribed limit it is no longer allowed to go. When you make the radius five-eighths you approach that limit at the outset. When you have three-fourths of an inch radius you have just that much more "precious metal," as our Secretary says, to wear upon. It was in the minds of some members that the form of the root of the flange should correspond with the head of the rail, in order to get the best results. Those of you who have followed, as I trust you all have, the correspondence in some of the railway papers, have discovered a very strong point made there against matching the shape of the rail with the tread of the wheel. I think the point is impregnable. I do not think any member here can successfully contest that point. So, Mr. Chairman, desiring to effect a compromise in the views and reach something that shall be the best as near as can be adopted, I beg to amend the amendment by submitting a section which will have one-sixteenth of an inch cone between the points given, which shall have a surface two and seven-sixteenths from the root of the flange to the point where the slope begins. I think that perhaps a number of members voted against the last proposition owing to the narrow space of the parallel lines. I think a good many would have voted aye if that space had been carried out further. In this wheel section we carry that space out further to within an inch and a quarter of the outer edge of the tread, leaving an inch and a quarter of gray metal outside to protect against any possibility of chipping on bad frogs. We have ample wearing space for the face of the wheel. We have one-sixteenth of an inch of cone on the wheel to meet the views of those who favor coning the wheel. We have three-fourths of an inch radius for the root of the flange, which will give us that much more wear before the wheel is condemned for sharp flange. I therefore move that as an amendment to the amendment.

The motion was seconded.

MR. MARDEN—Will Mr. Davenport explain to us what part of the rail it is that produces a sharp flange? We get on very many wheels a vertical sharp flange, or one that is nearly so, sometimes seven-eighths of an inch in depth, sometimes an inch in depth, or more, and I would like to ask him to explain to us what it is that will sharpen that flange perpendicular, and leave, perhaps, an eighth of an inch throat in the whole wheel.

MR. DAVENPORT—Mr. Chairman, I think there are three things that will produce that—a mis-mated pair of wheels; that is, an axle having on one end a wheel that is larger in diameter than the wheel on the other end, and therefore travels that much faster. I think that a truck that is out of tram will produce the same result ——

MR. MARDEN—One moment, Mr. President, we all understand those matters, but that is not the point we are getting at. I want to

know what is the point of contact that cuts the wheel. Admitting all those facts, there is something that must cut the flange of the wheel. Now, I want to know what part of the track it is that produces that vertical sharp flange, and leaves us in an old wheel perhaps one-eighth of an inch radius. I want to know what part of the rail produces it. I do not care what the conditions of the truck are.

MR. DAVENPORT—I think, of course, that it is the inner corner of the rail that does it.

MR. MARDEN—Admitting that to be the fact, then I cannot agree with Mr. Davenport that it does not make any difference about the rail-head, or that if we have a three-quarters of an inch radius in the throat, or a five-eighths of an inch radius or a half-inch radius, that there will not be very much difference in the wear of the wheel. I believe that if we could bring those two points nearly alike—I won't say that we want them exactly alike—perhaps it would be better if they were; but I believe that if we could have the head of the rail so that it should be perhaps half an inch radius on the inside, and the wheels from five-eighths to three-quarters radius, that we would get a better wearing wheel. It will give us more mileage than it will if we have a rail section one-eighth of an inch radius on the inside or a square on the inside. Now, there are two facts about a wheel section and a rail-head section. One is going to conform more or less to the other, and either the rail has got to wear more or less, or the wheel has got to wear more or less. And one or the other of them will wear until they conform more or less to each other. Now, it seems to me that the question is whether we shall have or recommend the maintenance of way men to consider whether it is important or not that the rail-head should be changed, or whether we had better work, from time to time, on the wheel in order to get a better wearing quality from it. My impression is that we have got to work together in regard to the matter, and from talking with the maintenance of way men I learn that they are simply waiting for us to establish the form of the wheel, and say that is the form, so that they can understand what we are going to use, and they will, I think, more or less readily make the rail-head conform to the wheel. I do not believe it makes any difference to us what form of throat we get in our wheel. As long as the head of the rail does not conform in relation to that, we are going to get more or less sharp flanges. I believe the more nearly it does conform to it the less sharp flanges we shall get.

MR. FORNEY—I move that Mr. Barnett be invited to take part in this discussion. We would like to hear the views of the Master Mechanics as well as the Master Car-Builders.

The motion was carried, and the President asked Mr. Barnett if he would be pleased to take part in the discussion.

MR. BARNETT—I am very much obliged to you, gentlemen. I did not come prepared to discuss this subject; but if I see an opportunity of expressing an opinion, I will do so.

MR. GAREY—A sketch of the form of wheel-tread would make it clearer to members perhaps.

MR. DAVENPORT—The only points I think at issue on this amendment to the amendment are the extending of the wearing face of the tread to within an inch and a quarter of the outer edge of the tread; that is one point; coning with one-sixteenth of an inch in that space instead of having it parallel; making the throat of the flange three-fourths of an inch radius instead of five-eighths, as was rejected in the vote of last year. Those three are the three points, and since I am on my feet I might suggest that what Mr. Marden has said has great force. You remember that the wearing face of some of the rails presents almost a square corner to the wheel. Of course it requires no argument to show that that is going to be destructive to the wheel. I understand from Mr. Goodwin that the Lehigh Valley Road has adopted a five-eighths radius on the wearing surface of their rails. Now, if this were adopted by the other railways of the country, so that instead of presenting a sharp corner on the wearing surface of the rail to cut the flange of the wheel out, they would have five-eighths radius there, and if we had three-fourths on our wheel, we would be accomplishing, in my humble opinion, the most desirable results for durability of both wheels and rails. I do not think we should match the two, but I do think we wish to get rid of that sharp corner that I see Mr. Marden is objecting to, and which I think every car-builder here objects to, and I do really think that the maintenance of way men, if they understood this thing, would appreciate that matter and give us a rail in a proper shape to run a wheel on. I think those three points make it as clear as I could with chalk, and I am not a very good artist. Mr. Forney is the only accomplished gentleman in blackboard practice that I see near me.

MR. BLACKALL—I understand there is no difference now between the wheel as proposed by the last gentleman and Mr. Cloud, with the exception that one wants three-fourths and the other five-eighths.

MR. CLOUD—As I understand Mr. Davenport, he proposes to increase the length of the first portion of the tread also. I simply propose that this cut that we all have shows a sixteenth coning in the two inches. I do not think it is material which is adopted, but I believe we have all had good reasons to confine ourselves to five-eighths radius, and I think it would be very unwise at present to decide differently.

MR. MILLER—I would ask Mr. Cloud if he would in his motion extend that; let it extend through. That would almost ——

MR. CLOUD—I should rather prefer that that first portion of the tread which has the one-sixteenth cone should extend to two and one-half.

MR. MILLER—I prefer your form of wheel, because as a matter of fact all wheel-makers are making a five-eighths radius. All the wheel-makers prefer a large throat in there. They say they can make a better chill in there. But I do not believe that is necessary.

MR. WILDER—I have some data as to the question of sharp flanges on wheels. Out of about 16,000 wheels thrown out for all causes in a

year, there were about five per cent. removed on account of sharp flanges, and if the engineers of railroad companies find that what is called here a square flange is better adapted to rails wearing than those of a larger radius, does it not seem that that question of five per cent. of all wheels removed being for sharp flanges is one that ought to be considered against the wear that you get from the rail?

MR. MARDEN—I think there is as much difference of opinion among engineers of maintenance of way as there is among car-builders. Some of them contend that a rail-head will wear better with a half-inch corner on the inside and slightly coned. Others contend that it will wear better with a sharp corner and have it flat on the top; and so they have various opinions. They do not agree, perhaps, any better than we do as car-builders. I find that they are open to conviction, and are studying the matter up, and are consulting more with one another now than heretofore. My objection to carrying that coning out, as suggested, would be this: I would not object to carrying it more than two inches; that would be two and three-eighths; but I would object to carrying it clear out. Three years ago, when we had very many chipped wheels on the line of our road, on the adoption of this form of tread they disappeared entirely, and I do not know of our having a single chipped wheel where the wheel was of this form of tread.

MR. FORSYTH—Will Mr. Cloud accept, as part of his amendment, to make the length of the conical portion of his tread two and three-eighths inches?

MR. CLOUD—Yes, sir; after the present amendment is disposed of.

THE PRESIDENT—The question is on Mr. Davenport's amendment to Mr. Cloud's amendment.

MR. BLACKALL—May I request a rising vote on that question?

THE PRESIDENT—Yes, sir.

MR. GRIEVES—I do not think one-half of the members in the room understand the case. I think it would be very much better to put it on the blackboard.

Mr. Forney made a sketch on the blackboard of the form proposed by Mr. Davenport.

MR. FORNEY—Before the question is put I would like to say a few words more in regard to it. We have been struggling with this flange question for a number of years. As to the half-inch radius, I do not mean to urge that, because I do not think it is a matter of very great importance, because if you make the radius five-eighths and the rail half an inch, the rail will very soon wear the wheel so that it will conform to its own shape. Although it is perhaps not a matter of much importance, yet it strikes me that mechanically it would be better to make the form of the rail and wheel alike. But as a good many people do not like a half-inch radius for the wheel, it would be better to withdraw from that position if we could secure the adoption of five-eighths. The wheelmen throughout the country are generally making their wheels with a five-eighths radius. If we go to three-fourths radius it strikes me that we will

introduce a new element of discord into this matter. There is a pretty tolerable agreement in regard to five-eighths, and I should feel that under the circumstances it would be a mistake if we departed from that.

MR. CARLTON—The Baltimore & Ohio have recently adopted this style of wheel. They have conformed to it strictly in diameter, as well as flange and radius of flange. Now, as Mr. Adams has just said, I think that the most important feature of this is the diameter of the wheel. We have gone to the expense of making new chills for our car system. I do not see the diameter of the wheel placed on the blackboard, and I think that we should vote on the diameter as well as all other parts.

THE PRESIDENT—I think the diameter is already established.

In response to repeated calls for the question, the President called for a vote on Mr. Davenport's amendment, and it was lost.

MR. CLOUD—I will accept the amendment proposed by Mr. Forsyth to the amendment already offered to the cut in your hands, and put the figures on the board in place of those that are now there.

MR. FORNEY—While Mr. Cloud is putting the figures on the board I will read from the Standards of the Association the following:

"The standard diameter for chill-moulds, recommended at the Sixteenth Annual Convention, held in Philadelphia, in 1882 (see pages 178 and 179 of that year), for 33-inch wheels is 33½ inches at the point indicated in Figure 8, and for 30-inch wheels 30⅛ inches."

That is already an established standard, and will not come up for consideration at this meeting, so that any matter pertaining to the diameter of the wheel may be left out of consideration.

MR. GRIEVES—I want to say, Mr. President, that the reason we voted against this form of wheel was on account of the tread. We do not like the form of the tread, the cylindrical and the coned mixed together. We adopted the flange, as stated by Mr. Carlton, in our new wheel, allowing the five-eighths throat.

MR. MACKENZIE—I move an amendment to Mr. Cloud's amendment that we make the wheel conical or one in twenty, leaving the form of the wheel five-eighths.

The motion was seconded.

MR. CLOUD—Do I understand that it is proposed to apply only to that portion of the tread which is 2⅜ inches long?

MR. MACKENZIE—No; it is to extend all the way out.

MR. WILDER—In other words, Mr. Mackenzie's amendment would bring us back to the old style of conical wheel.

MR. McILWAIN—Which we do not want.

MR. ADAMS—I object to that very strongly, on the ground which Mr. Marden has already mentioned, that before we adopted this form of wheel we had an immense number of chipped treads, and as he said, they have almost entirely disappeared since we changed the form of the tread. Now, to go back to the old form again will involve us in the

same difficulty we had before. I hope the members will amendment down.

MR. MACKENZIE—Perhaps it would be well for me to on this amendment. I understand that we had a coned wh this section was offered to the convention; I also understand was no regularity as to how much cone should be on that wh were giving five-eighths of an inch, some more and some les propose that we give it one-eighth of an inch in four and a h and we get nearly the same results as we have with a sixte inch in two and three-eighths, and it seems to me that the wh not run a thousand miles before it would be as shown there. too much drop on the end of that wheel in my opinion, and o engineers say so. They say they are very severe upon the p frog.

MR. McILWAIN—In Canada, where we have some p frosts, and pretty long ones too, this taper at the end has beneficial, both to wheels in chipping and to rail-points and I know, in my own experience through Ontario, that the wheels from chipping this last winter has been fifty per wheels of that shape, or the shape on the circular, over wheel conical, the old style. That was enough to convince me th wheel-tread was what we wanted. There is another point Marden has brought forward here, that the maintenance of w waiting for us to settle on a throat. After that is done they likely settle on a standard for a rail-head. Now, we do n stand back and wait forever, and as five-eighths of an inch compromise between those who want a half inch and those w three-quarter throat, I think we better stand by it. It suit rate up in Canada pretty well, and I would vote against anyth the original.

Mr. Mackenzie's amendment was then put and lost.

THE PRESIDENT—Now, the question occurs on M amendment, altering the original cut; you see it on the black

MR. MARDEN—As I understand Mr. Cloud's amendm going to have one-eighth of an inch instead of three-sixteenth

MR. CLOUD—I said one-eighth of an inch additional, wh it three-sixteenths of an inch altogether.

MR. ADAMS—It is proposed, then, to refer this form, the one on the circular, to letter-ballot?

MR. CLOUD—Yes, sir.

MR. MACKENZIE—What is the total coning?

MR. CLOUD—It is three-sixteenths total.

Mr. Cloud's amendment was carried.

[Fig. 8, on the next page, shows the form of tread and f posed by Mr. Cloud to be submitted to letter-ballot for appro

Mr. Forney read a communication signed by J. D. McIlwa

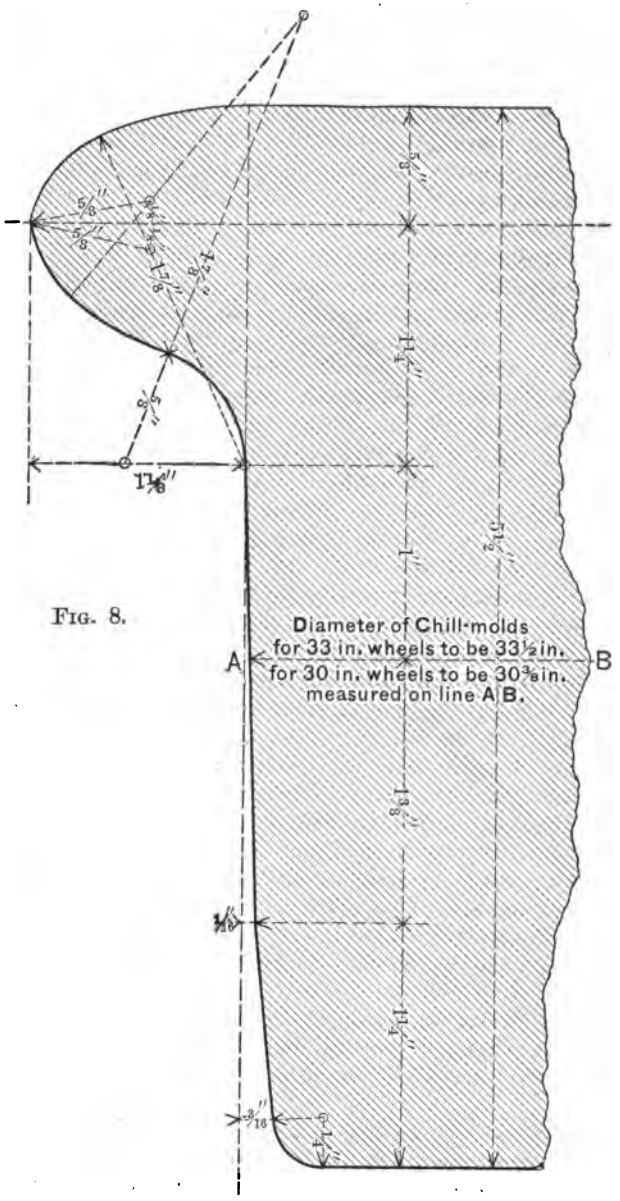

Diameter of Chill-molds
for 33 in. wheels to be 33½ in.
for 30 in. wheels to be 30⅜ in.
measured on line A B.
A
B

FIG. 8.

Martin and Howard Carlton, offering transportation facili
members and guests of the Association.

MR. LENTZ—As the question is brought before the hou
say that any parties wishing to go east can do so by the Leh
Railroad. The same invitation that was extended by Mr. M
extended by the Lehigh Valley Railroad. We would like
soon as possible how many there will be. We have a train at
Bridge now, but possibly there may not be room enough on t
accommodate all who desire to go. If those wishing to go by
will let me know by six o'clock this evening, we can then ma
ments to have what additional cars may be necessary here.

MR. MARDEN—While this matter is under consideratio
like to say that quite a number have spoken to me about g
Master Mechanics' Association at Boston, over the Hoosac Tu
I would like to have all of those that wish to go that way n
soon as possible, that I may make arrangements. If all t
going over the Lehigh Valley, and wish to go the other way,
know as early to-day as possible, I will make proper arrangen

MR. BRADY—The New York Central extends the same
Mr. Lentz does. A special car will leave here Friday morni
or nine o'clock, and get to New York at eleven.

THE PRESIDENT—I wish to announce that there will
ing of the representatives of the Wagner Car Company, in th
seven o'clock this evening. The members will bear in min
interchange rules come up for revision at three o'clock this af
hope that we shall have a full attendance at that time.

MR. FORNEY—The members will recollect that durin
year a letter-ballot was sent out with reference to brake-s
Christie and the Collin shoes were both submitted to letter
both defeated. The Executive Committee had the matter
sideration, and they adopted a resolution, which I will read:

"That the Executive Committee refer the matter of brak
shoe to the convention, stating that the ballot did not adopt on
and that they submit at the same time drawings of the Chris
used by the Boston & Albany, and the Collin shoe and head,
us, and recommend to the convention that they adopt bot
ards."

The blue prints on the door are the drawings which
prepared of the Christie shoe and the Collin shoe. What t
tee propose is, that they both be submitted and both be
standards.

You all know Mr. Adams' modesty, and it has led him
me to give a statement to this audience of some of the reas
duced the committee to recommend the adoption of the two
Of course the difficulty about adopting one of those standard
more than one-third of the members were opposed to each
brake-shoes, so that it was impossible to concentrate a two-

on either of them. It therefore seemed to the committee that, as it was apparently impossible to adopt either one, it would be better to adopt both as standards, and have two standards instead of two hundred. The Pennsylvania and a good many other lines are using the Collin shoe. On the other hand, a good many lines are using the Christie shoe. So it was thought that if we adopted both for standards that we would be accomplishing the purposes of the Association more satisfactorily than in any other way.

A MEMBER—Are they patented?

MR. FORNEY—The patents, I believe, are expired on both.

MR. CLOUD—There is no patent on the Collin brake-shoe. I do not know about the other. Having both these as standards would be the next best thing to having one standard, which at present seems impracticable. I have the drawings from which these blue prints are made. They are new drawings, and are made with care from the castings as they are now. One of the castings was made by the Pennsylvania Railroad company, and the other by the Boston & Albany Company, being the two companies which originally used the two shoes, as far as we know. All the necessary dimensions are given, so that the castings will fit.

MR. CHAMBERLAIN—I move, Mr. President, that both be submitted to letter-ballot.

The motion was seconded.

MR. CLOUD—It being understood that both are to be adopted as standards.

MR. C. A. SMITH—Is not this a bad precedent to establish, when we want to come down to uniformity? It is proposed to take two as standards. How many companies are there that have something else besides these two? They will say, if there are two of them, we are not going to change ours. The line that I represent has a standard, although we have a great many different kinds running. I should feel a little hesitancy about adopting another, if there are to be two. But if there was one, there would be no question about adopting it.

MR. CHAMBERLAIN—As I understand, the question does not stand with the rest of us as it does with Mr. Smith. He furnishes brake-shoes for the Union Tank Line; we furnish them for almost every other line. It would be much better, if we cannot agree on one, that we agree on two, thereby avoiding the necessity of carrying so many patterns.

MR. SMITH—The railroads furnish probably half or more that we use. You will be putting on two patterns besides ours, and then we will have three on the road. I think it is best to come down to uniformity and stick to one.

MR. FORNEY—Will Mr. Smith tell us how we can secure uniformity? If he will inform the Secretary how he can induce members to vote for one of those as a standard I wish he would do so.

MR. SMITH—I think I told the Secretary before that the voting we have is all wrong; that a majority should rule, and that our Con-

stitution should be altered so that the majority shall rule, a
almost everywhere else. I think it is decidedly wrong to ask
thirds vote, because if you do you never will adopt any standa

MR. RHODES—Our company on this letter-ballot vote
Christie shoe, and our reasons for it were that we thought th
shoe was the best, and some reasons for thinking so were giv
last convention. Now, we are quite ready to vote for both.
that we would be accomplishing something by doing that. In a l
it will be proved which is the best shoe, and we may then wa
one out. Possibly we may be mistaken, so far as our road is c
in thinking that one is better than the other. The other sh
the best. If we have some mode of experimenting with
getting both pretty generally introduced, we will soon know wh
best. One may be lost out as the cars go over the road.
will not ; it will always be in there. That is, the best shoe w
be there ; the worst one will not be there. After that has go
some little time, the Association will be in shape to say—this sh
is so clearly the best, we want for a standard. In these matter
ards, where we cannot agree, if we will sacrifice our views and
some of those who advocate other shoes have some ground
show that we are willing to test it, we shall arrive at this stan

MR. MARDEN—I move, as an amendment, that the Chr
be submitted to a letter-ballot as a standard to be adopted.

MR. ADAMS—Although I am strongly in favor of the Chr
and believe it is the best, I favor the position that is taken he
senting both of those for a standard, for the reason that w
reduce the variety of shoes used in the country ; and we hav
once and cannot get a two-thirds vote for the Christie shoe.
cannot get all we want, let us take what we can get. It lo
like common sense, if we cannot get one of those established,
them both established, and throw out all others. That redu
much. Mr. Smith says it tends to make a bad precedent. I
to look at it in that light to a certain extent. It may, to a certa
establish a bad precedent ; but here is a case that is distinct.
that we cannot carry either of them separately. We have
evidence that we can adopt both as standards. Now, where th
comes in is, that while the votes of the Association may adopt
ard, the members may not follow it. They will vote to do th
and will not do them. When we vote to adopt a standard, it
stood that we are expected to turn our attention to that stan
introduce it on all new work afterward, and I think we ar
bound and in honor bound to do that. Every one represent
Association is in honor bound, when a standard is established
that standard for all new work just as rapidly as possible.

MR. MARDEN—I do not quite agree with Mr. Adams in
of our not being able to adopt a standard. While we are
Christie head and shoe, the same as he is, yet if the Collin sh

be adopted as a standard, we certainly should change our patterns and use it. I am not particular in regard to that matter; but I do think that we ought to have one standard, if it is possible to get it. I have talked with quite a number, and I find that they have changed their opinions since the last vote was taken. If we vote for both of them, we will really then have two standards, which, of course, would be better than none. But I should prefer very much that we have either one or the other of them for a standard.

MR. FORNEY—I agree with Mr. Marden that it would be desirable to have one standard; but there is no reason at present, to my knowledge, for thinking that two-thirds will vote for the Christie shoe if submitted again. If Mr. Marden knows any reason for their changing their votes, that presents a new aspect of the case; but I do not know any reason.

MR. MARDEN—As I look at the last vote, there was only a lack of nineteen votes to have adopted a standard.

MR. FORNEY—It was very close.

MR. MARDEN—And I will say that I have talked with several who are using the Collin shoe, and have changed their minds; have told me that they thought the Christie shoe would stay in position longer than the Collin shoe. I make these remarks, not but that if the Collin shoe was adopted we should use it.

MR. McILWAIN—I second Mr. Marden's amendment, if it is not seconded.

MR. GRIEVES—The Baltimore & Ohio have adopted the Christie shoe, and we are putting it on all our cars as fast as possible.

MR. ADAMS—Did the representatives of the Baltimore & Ohio Road vote in favor of the Collin shoe before?

MR. GRIEVES—No; we voted in favor of the Christie shoe.

MR. FORNEY—The vote was 130 in favor of the Collin shoe, and 245 against it; 269 in favor of the Christie shoe, and 163 against it.

THE PRESIDENT—The question is on the amendment of Mr. Marden, that the Christie shoe be submitted to letter-ballot alone.

A *viva voce* vote was taken, but the President was unable to decide whether or not the amendment was carried, and called for a rising vote. The amendment was carried, 41 voting for it, and 32 against it.

MR. WALL—Mr. President, I call for a vote by cars.

The motion was seconded.

MR. MARDEN—I would ask if this vote of cars is to be on the basis of our representative vote, and to be given only by those who are conversant with car-building or are car-builders or representatives of car departments?

MR. CLOUD—I would like to ask Mr. Wall on what authority he calls for a vote by cars—if he will please refer to that part of the Constitution or By-laws which justifies the call?

MR. WALL—I make the request that a vote be taken by cars. If there are objections to it ——

MR. CLOUD—I object to it.

MR. WALL—I think a vote by cars will give an opp everybody to make himself understood.

MR. CLOUD—I do not think that would be accomplish to waste time in doing this. If we can adopt the Christie great deal better than to adopt them both now, it seems to m matter does not come to a standard this year the practice much changed; because we have discussed this matter from t and car-builders on different railroads in the country ca become conversant with the present position of the Master C Association in the matter, that if any one was called upon year to decide upon a brake-shoe to use, he would probabl same.

THE PRESIDENT—I believe that Mr. Wall's motio order, in accordance with Article IX. of the Constitution.

MR. SCOTT—Does this motion now carry with it t head?

THE PRESIDENT—The head and shoe.

Article IX. of the Constitution says that: "Any recommending the adoption of standard constructions or pr be in writing, and be accompanied by drawings, if the latte sary for a clear understanding of the subject. Such propo be then submitted to the Association for discussion, after w shall be taken to decide whether the proposition shall be su decision by letter-ballot to all the members entitled to vote.' been done.

MR. MARDEN—I will say for the benefit of the last m was up, that this relates merely to the form, and not to any n enters into the construction of it, and that there is no patent

THE PRESIDENT—I will call for the report of the Committee on Couplers.

Mr. Cloud read this report, which is as follows:

REPORT OF THE EXECUTIVE COMMITTEE ON T OF CAR COUPLERS AT BUFFALO, NEW YO SEPTEMBER 15, 16 AND 17, 1885.

Pursuant to the following resolution passed at the Annual Convention of this Association, held at Old P fort, June 9, 10, 11 and 12, 1885, the Executive respectfully submits its report:

RESOLUTION.

"I move to refer to the Executive Committee the "automatic freight-car couplers, with the power to a "and conduct a public trial at some central point, to e

"or more experts, and to solicit the co-operation of the railroad "companies in making trials and in furnishing the funds for "conducting the same, the Executive Committee to make report "of their results and recommendations at the next meeting of "the Association."

Under date of August 1, the following call was issued:

"The Executive Committee of the Master Car-Builders' Association, acting in accordance with the general instructions given by the Association at the last convention, will make a public trial of automatic freight-car couplers at Buffalo, N. Y., on Tuesday, September 15, 1885.

"The Executive Committee will be guided by the results of their trial in recommending several forms of couplers to the railroad companies for further test in actual service. They will watch the behavior of those selected couplers until one month prior to the next convention of the Association, when they will prepare a report, and may recommend for universal adoption one or more different forms of automatic freight-car couplers.

"All parties desirous of presenting freight-car couplers to the consideration of the Master Car-Builders' Association are invited to participate in this trial.

"The following requirements must be complied with:

"The couplers must be attached to each end of two freight cars—preferably box cars; both cars must be forwarded, freight prepaid, to J. S. Hammond, Agent, New York, Lake Erie & Western Railroad, Buffalo, N. Y. Full drawings and specifications together with letters patent, and any opinions on the device that may have been given by the Eastern or Western Railroad Association, or by the Courts, and also a statement of the numbers and initials of cars equipped with the coupler and already in service, must be forwarded to the Executive Committee of the Master Car-Builders' Association, care of Mr. M. N. Forney, No. 73 Broadway, New York, prior to September 15.

"The committee will not consider or investigate the merits of couplers represented only by models, drawings or other descriptions. An imperative condition of the trial will be that couplers submitted to the committee must be applied to two cars, so that they can be tested at the time and place named.

"The Executive Committee is not prepared to assist inventors

or owners of patents on car couplers in procuring cars equipped and delivered at Buffalo ready for trial. Negotiations of this character must be conducted directly between the owners of the couplers and the railroad companies. It will be necessary for parties furnishing cars for this trial to arrange direct with the railroad companies for their return.

"Notice of intention to take part in the trial, giving numbers and initials of the two cars that will be furnished should be addressed to Edward B. Wall, Columbus, O., or to N. Forney, No. 73 Broadway, New York, who will also receive inquiries with reference to the proposed trials.

"Railroad Commissioners of the various States will be invited to be present at this trial."

In accordance with this call 46 couplers were entered for trial, 42 were tested, and 4 failed to appear.

The couplers were subjected to the following tests:

1st. A car equipped with the patent coupler was coupled to a car having the old-style link and pin, and the comparative merits of the operation noted, together with the fact as to whether the cars could be uncoupled without going between them.

2d. Two cars equipped with the patent couplers were driven together at the ordinary speed of shifting, and set not to couple.

3d. Two cars equipped with the patent couplers were driven both at ordinary speed used in hand-coupling and at such greater speed as safely represented the blows frequently received in yard service. Uncoupling was tried after each case.

4th. The end of one car contiguous to the other car of the pair was blocked up so as to raise the centre of the coupler 4 inches, and tests numbers 1, 2 and 3 repeated, on a track having a curvature of 20 degrees and 20 minutes (282 feet radius). The track both on curve and tangent was good.

The switching locomotive used had cylinders 16 in. by 24 in. and six drivers 44 in. in diameter.

The standard link used was of D shaped section, $1\frac{1}{4}$ in. by $10\frac{1}{4}$ in. long, and $1\frac{3}{4}$ in. wide inside.

All of the couplers submitted were classified as follows:

Class "A."—Loose link couplers.

Subdivision 1. With pin supporters.

Subdivision 2. With catches or dogs substituted for pins.

Class "*B.*"—Fixed link couplers.

Class "*C.*"—Hook couplers; coupling in a vertical plane.
Subdivision 1. Lock effected by gravity.
Subdivision 2. Lock effected by a spring.

Class "*D.*"—Loose coupling bar couplers.

Class "*E.*"—Hook couplers; coupling in a horizontal plane.

Class "*M.*"—Miscellaneous couplers.

A tabulated description of each coupler tested is presented with the report, giving the classification, principle of operation, material of construction, height of the centre of coupler above the top of rail, the employment of deadwoods or buffers, and the distance between cars when springs are free and when compressed (so that the projection of the coupler beyond the end sill may be understood).

The second table presents a summary of the results of the tests of each coupler.

The *Railroad Gazette's* woodcut reproduction, Figs. 9 to 50, of the photographs of the couplers on the cars as they were presented for trial, is also submitted with the report.

After a careful consideration of, not only the behavior of the couplers in the trial, but of their general design, the principles upon which they are operated, and the promise they gave of further development, your committee recommended the following couplers for further trial in actual service:

Class "*A*" 1.—McKeen and Perry.

Class "*A*" 2.—Archer, Gifford and Marks.

Class "*B.*"—Ames.

Class "*C*" 1.—Cowell, Dowling, Thurmond, Hein, and Titus & Bossinger.

Class "*C*" 2.—Janney.

Arrangements were then effected to place each of these couplers upon ten line cars passing over trunk lines. The cars equipped were stenciled plainly on each side near the end, "M. C. B. test.....Coupler," and a request was made upon members of the Association to see that proper instructions in the matter were issued to all car inspectors, and foremen of repair shops, as well as to train men on the lines with which they were

connected, and that reports be made to the Secretary
following points:

1st. The nature and cost of repairs to couplers
receiving such repairs, by car number and name of c

2d. State whether there has been any failure of
to couple automatically with its own kind, speci
couplers have so failed and in how many instances, a

3d. State whether any of the couplers have a
uncoupled when in service on your line, specifying w
have so behaved, with the number of such occurren
coupler, and with cause and circumstances.

4th. Give opinion of train men as to the compa
in coupling and uncoupling each style of couple
passed over your line, when coupled with one of its

5th. Give opinion of your train men as to the
safety or danger involved in coupling each of the co
have passed over your line with the ordinary drawh
pared to coupling two ordinary drawheads together.

6th. Give any further information of importan
not included in the foregoing, which may have been
regard to any of the couplers which have passed ove

The owners of the twelve couplers selected for
in service were notified of the trunk lines to
couplers had been assigned.

The Executive Committee further advised the p
Hein, Dowling and Thurmond couplers, to arrange, i
couple with the Janney.

There was considerable delay caused in getting
couplers in service for the further test, owing in
proposition made to the owners of some of them tha
be arranged, if possible, to couple automatically with
and in part to the difficulty experienced in finding r
were willing to have their cars equipped with ce
couplers, and further owing to the unaccountable
owners of some of the couplers in furnishing the nec
rial. Some of the twelve couplers have, however,
vice on the ten cars for a short time; some have been

portion only of the cars, and still others have not been applied to the cars at all for this test, so far as the committee is advised.

The reports which have been received up to this date from the couplers already in service are necessarily incomplete, and, in fact, we have received reports from only five couplers on a few lines after but short service, and it would be manifestly useless to burden this report with such incomplete details. The trial in service is, however, progressing, and if the Association thinks it proper we would suggest that the matter be continued in the Executive Committee's hands to complete what they have already begun, and to consider only such as to them seems best, of new and improved couplers which may be brought to their attention, and which, to the committee, appear to give promise of an outcome beneficial to the railroads of the country.

In reviewing the present state of the automatic coupler question, this committee feels grave doubts as to whether there is to-day available any automatic coupler which a railroad company would be justified in applying to its cars; for inasmuch as other railroad companies would inevitably apply other couplers, we believe that the danger to train men in handling cars would be increased owing to the vast interchange of cars among different railroads, and that the cost of maintaining car-couplers to the roads themselves would be greatly increased. Until the time, therefore, when the principle of the "survival of the fittest," aided by such feeble efforts as we and others are able to give, we think the safest course for railroad companies to pursue is the conservative one of retaining the old general style of coupling; and we earnestly recommend that the energies of this Association at this time be devoted to adopting and getting into practice as speedily as possible, uniformity in style and construction of drawheads and deadwoods, believing as we do that we will thereby be pursuing the wisest course, for the present, to save employees of railroads from bodily injury.

For the future, however distant it may be, we hope to see a form of coupler which will be safer for train men, but we think that the way to its development will be through the application of the best of the car-couplers proposed, to a reasonable number of cars, rather than by the general use, whether enforced by law or otherwise, of couplers which have not been sufficiently proven beforehand; and out of all of the couplers which have thus far

been brought to the attention of this committee, as menti
the previous part of this report, we would recommend
Association as most worthy of trial in sufficient numb
demonstrate their ultimate worth, the McKeen coupler—
and Archer, if arranged to couple automatically with each
the Ames coupler; the Janney, Thurmond and Dowl
arranged to couple automatically together.

Your committee thinks that the above-named couplers
sent among them the type which will ultimately prove succ
and if the Association will sustain our recommendation to co
the committee and investigate the question further duri
coming year, we will consider only such new couplers as n
recommended for trial by five members of the Association, a
will couple automatically with one or the other of thes
types—unless very powerful reasons, which appear good
committee, are given for some new type. After a most
consideration of the subject, we are impressed with the fa
no aid can be given in settlement of this question, on the
basis and with the least loss of life and limb in the mea
by this Association, unless you are willing to consider the
from a purely mechanical standpoint first; as otherwise inc
cost of maintenance will inevitably annul all differences i
cost, and at the same time result in greater injury to you
men.

The committee regrets that it has not been able to do
towards the development of this question in the past ye
the delays have been such as we had no power to avert; a
matter is here left in the hands of the Association, feelin
that it will do its utmost in furtherance of the safe and pr
settlement of the question of coupling cars, and with a
insight as well as a more sincere regard for the safety of
men than can be had by the general public, whose intentio
doubtless good, but whose actions, as expressed in State la
the question of car couplers, are already still further endan
the employees of the roads you represent, in their a
duties.

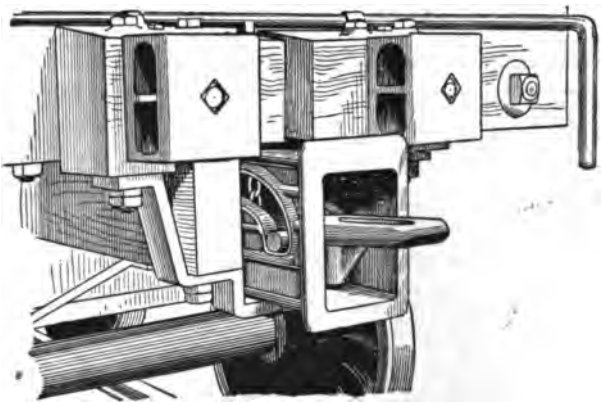


FIG. 9.—Ames.—Recommended for Trial.

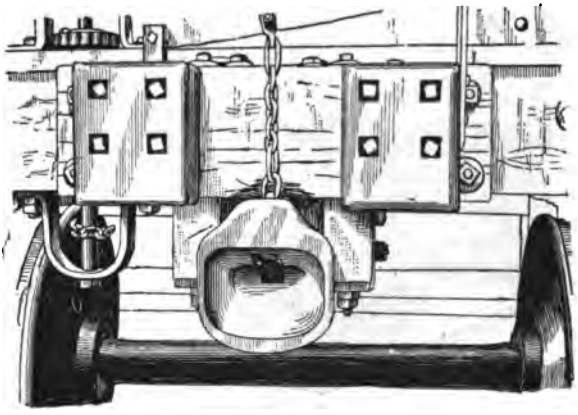


FIG. 10.—Archer.—Recommended for Trial.

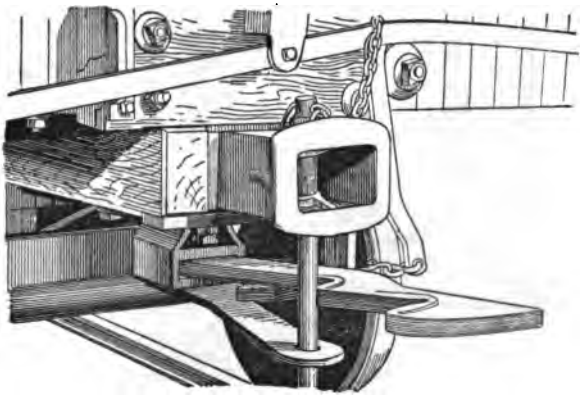


Fig. 11.—Barnes.

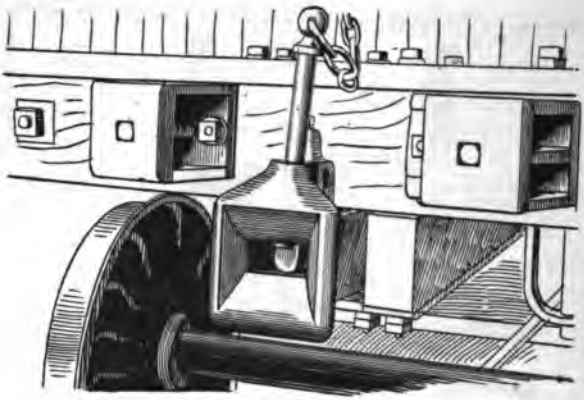


FIG. 12.—Bird.

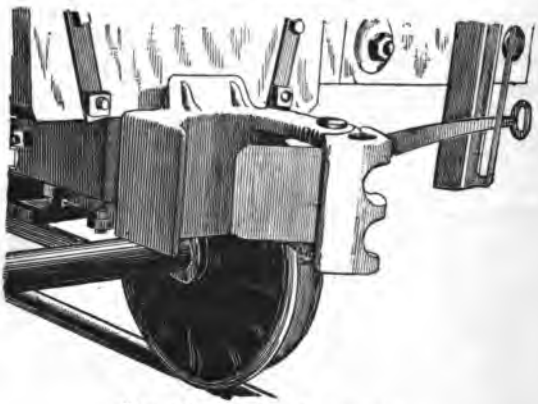


FIG. 13.—Boston Automatic.

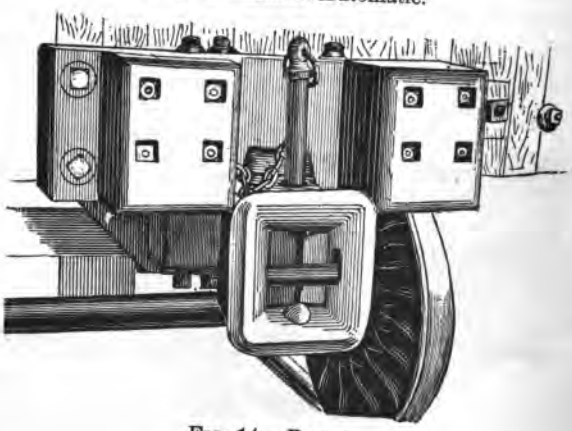


FIG. 14.—Brown.

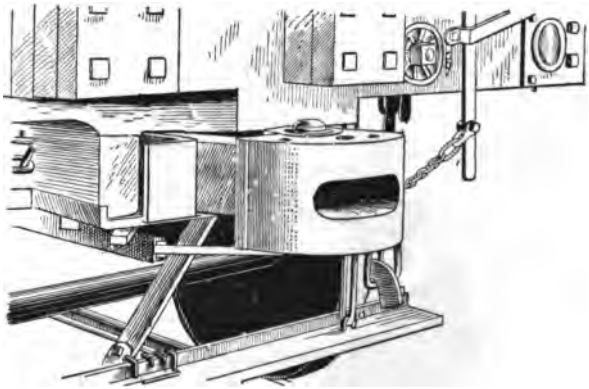


FIG. 15.—Cowell.—Recommended for Trial.

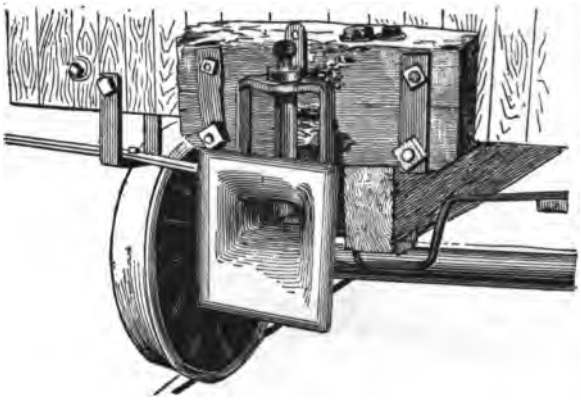


FIG. 16.—Curry.

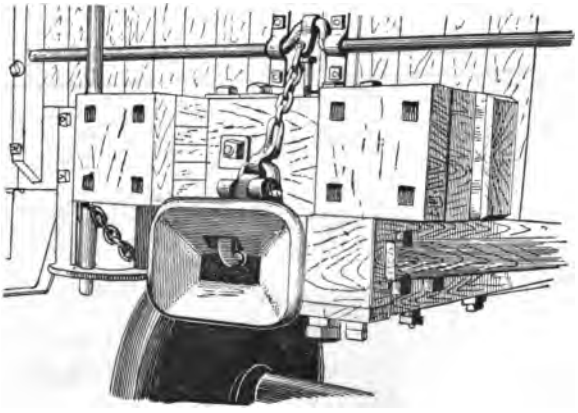


FIG. 17.—Curtis & Wood.

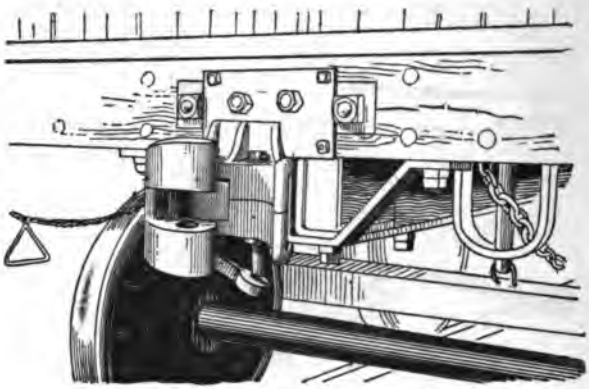


FIG. 18.—Dowling.—Recommended for Trial.

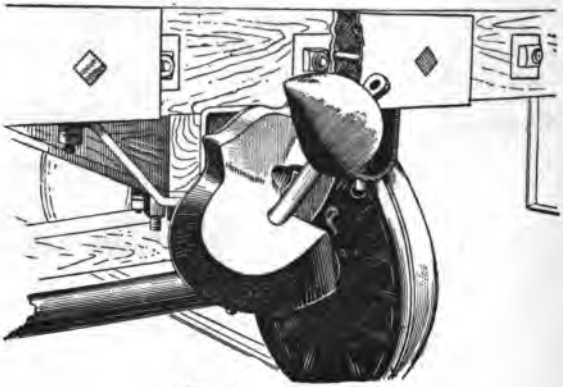


FIG. 19.—Emmett.

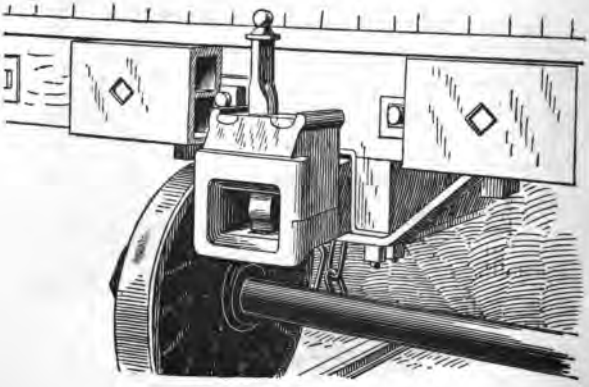


FIG. 20.—Eureka.

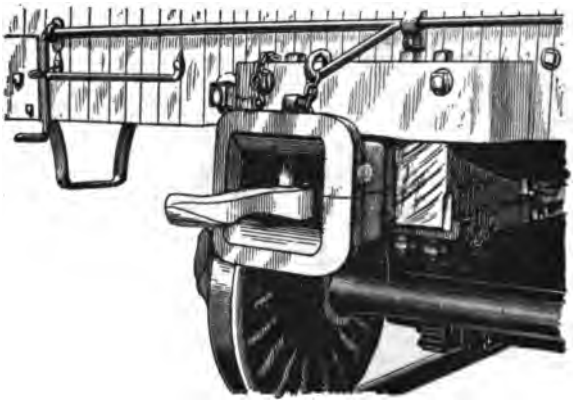


FIG. 21.—Fitzgerald & Van Dorn.

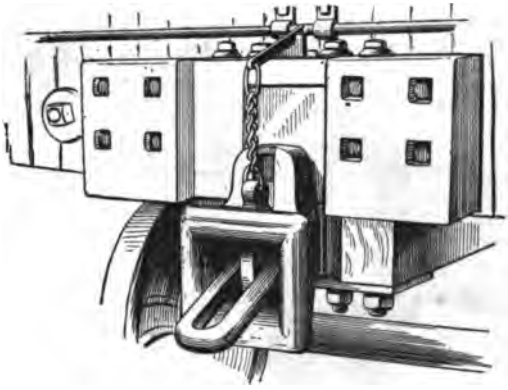


FIG. 22.—Gifford.—Recommended for Trial.

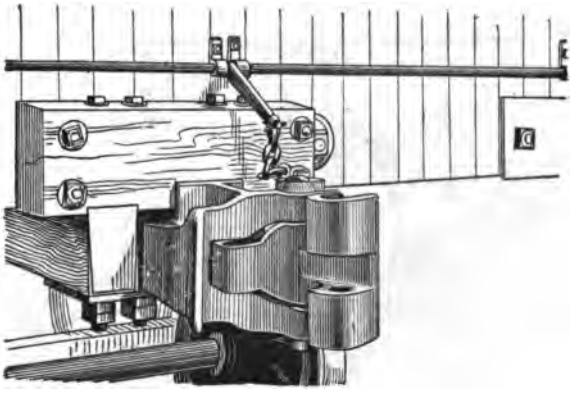


FIG. 23.—Hien.—Recommended for Trial.

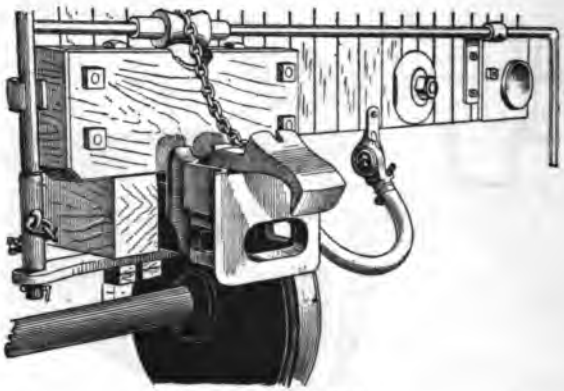


FIG. 24.—Hilliard.

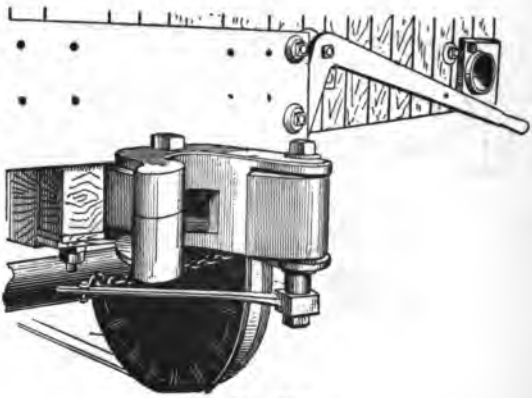


FIG. 25.—Hills.

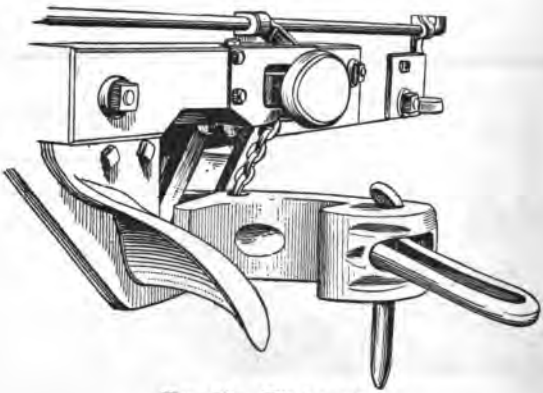


FIG. 26.—Hitchcock.

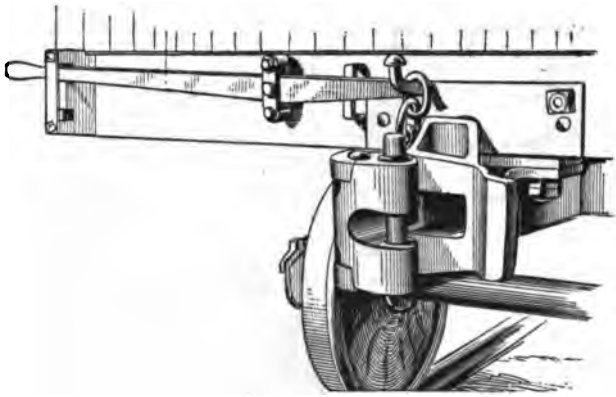


FIG. 27.—Janney.—Recommended for Trial.

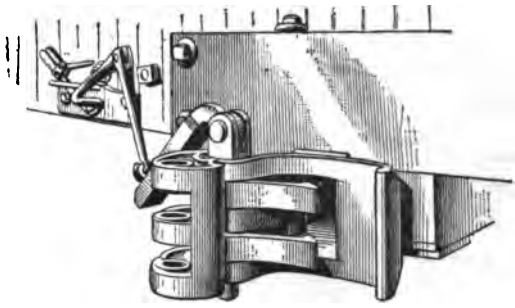


FIG. 28.—Joo.

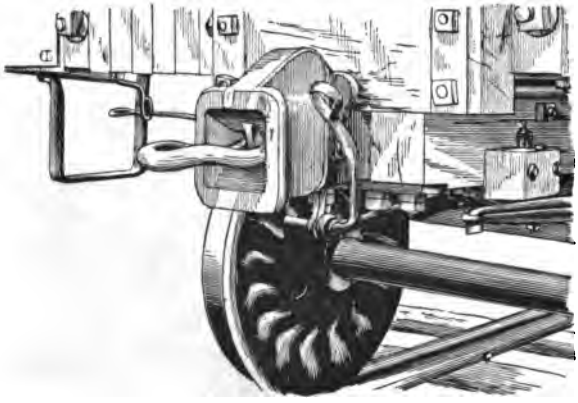


FIG. 29.—Keily.

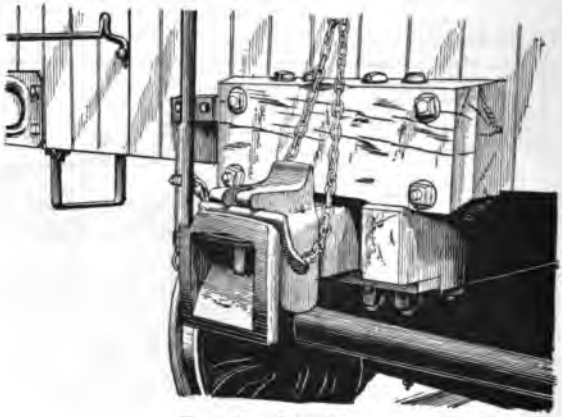


FIG. 30.—Lancaster.

FIG. 31.—Le Roux & Van Aarle.

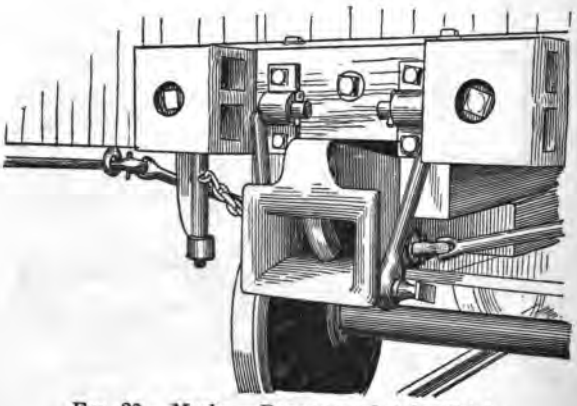


FIG. 32.—Marks.—Recommended for Trial.

FIG. 33.—McCree.

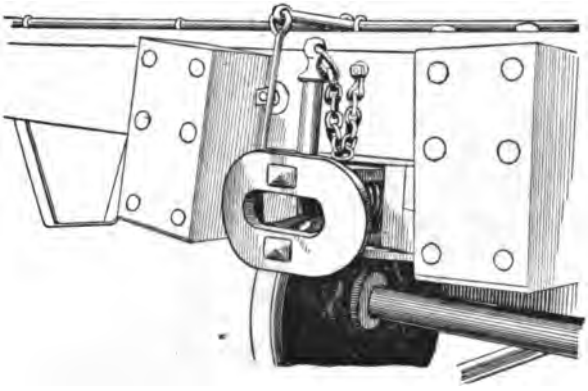


FIG. 34.—McKeen.—Recommended for Trial.

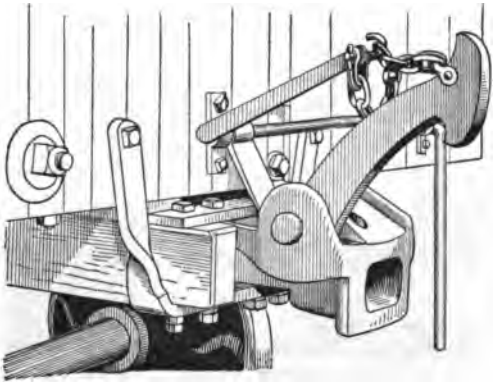


FIG. 35.—Meadows & Mead.

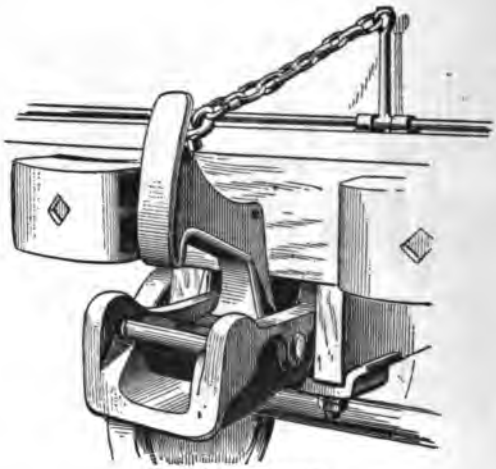


FIG. 36.—Morgan.

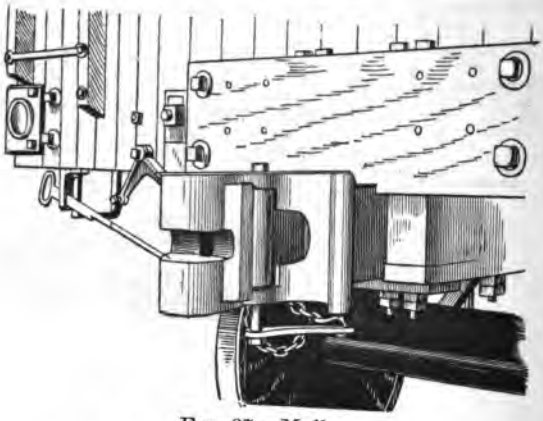


FIG. 37.—Muller.

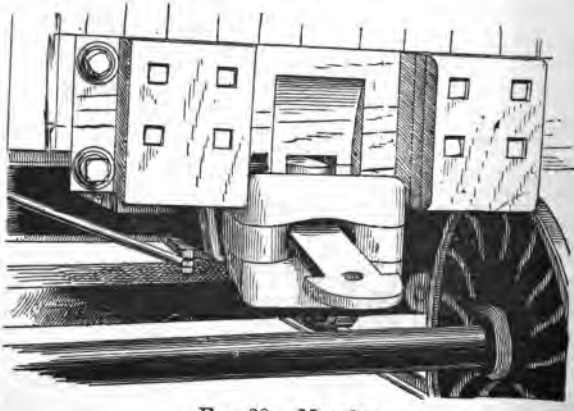


FIG. 38.—Murphy.

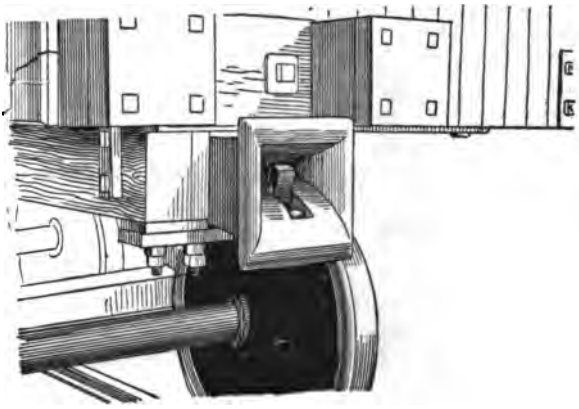


FIG. 39.—Payne.

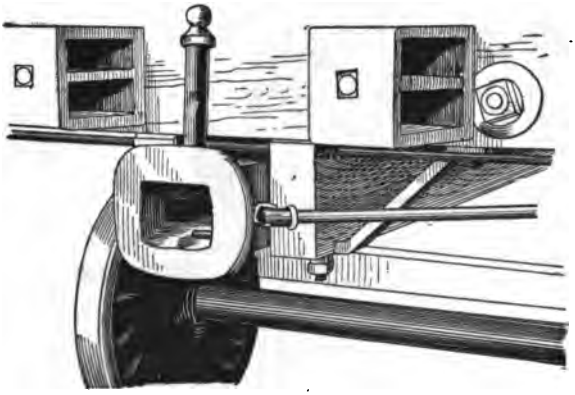


FIG. 40.—Perry.—Recommended for Trial.

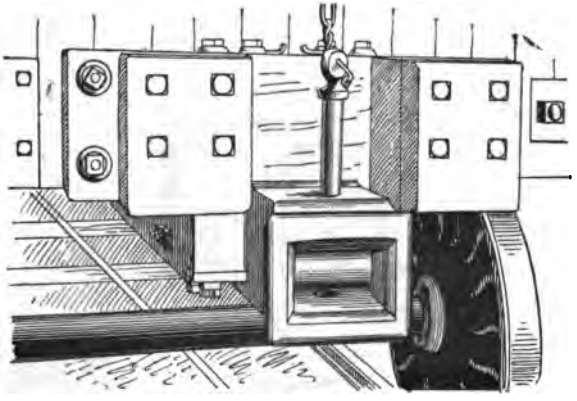


FIG. 41.—Russell's Eccentric.

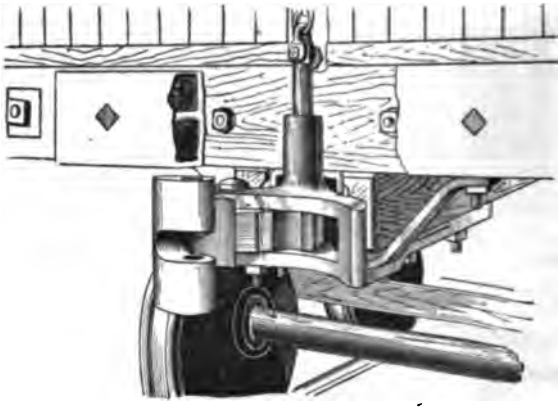


FIG. 42.—Simpson's.

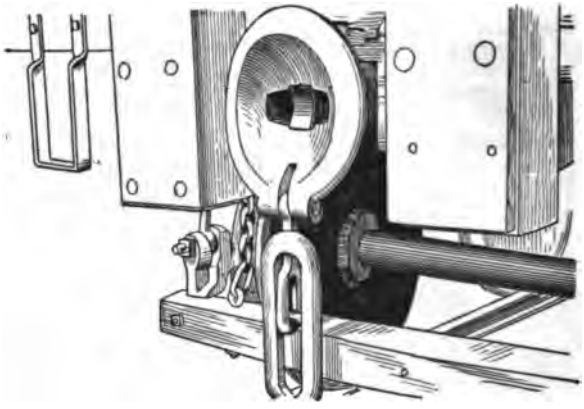


FIG. 43.—Smillie.

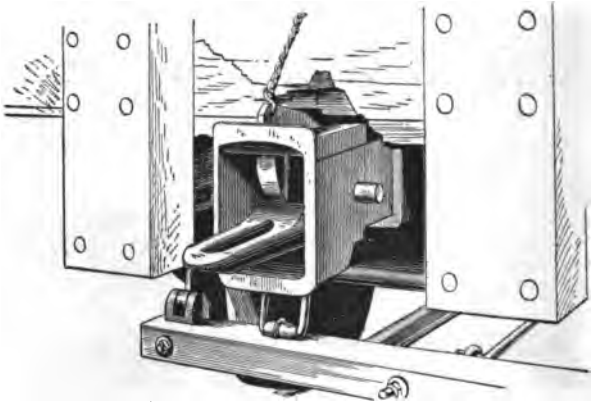


FIG. 44.—Stanford.

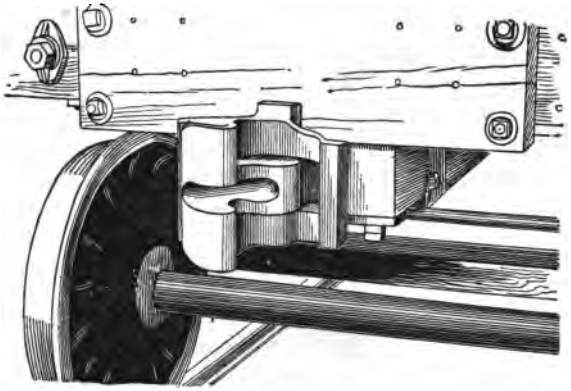


FIG. 45.—Thurmond.—Recommended for Trial.

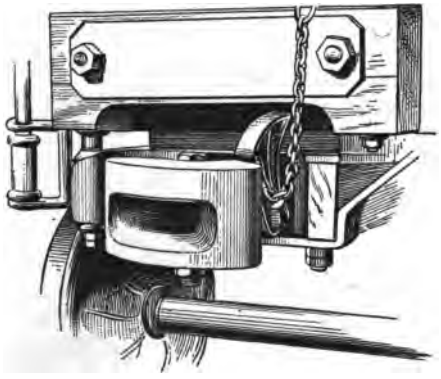


FIG. 46.—Titus & Bossinger.—Recommended for Trial.

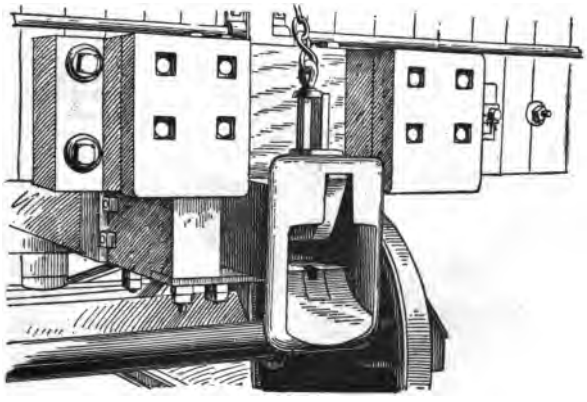


FIG. 47.—United States.

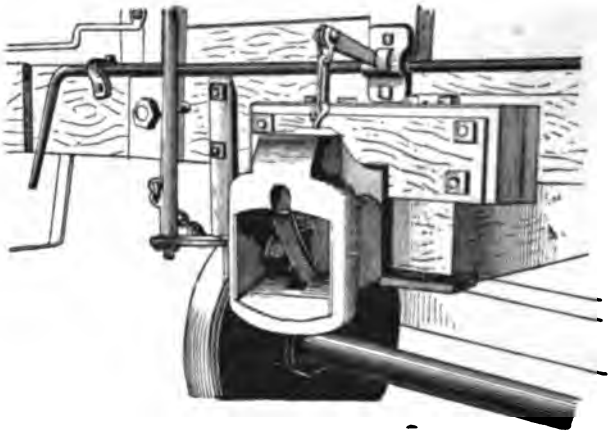


FIG. 48.—Union.

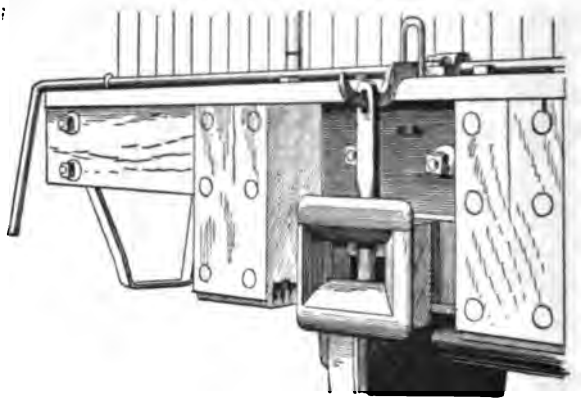


FIG. 49.—Whitman.

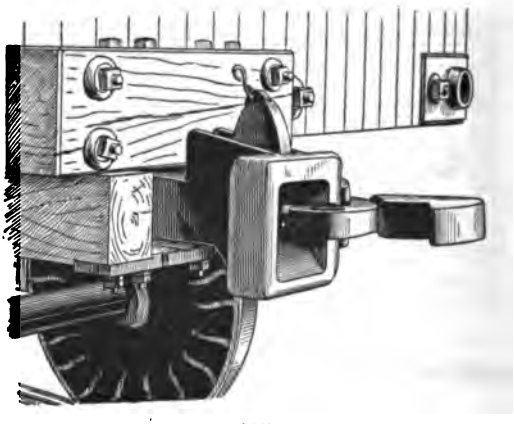


FIG. 50.—Williams.

THE PRESIDENT—You have heard the report of your Executive Committee on this very important question of car-couplers. What is your pleasure?

MR. KEELER—I move that the report be received and continued, and the recommendations adopted.

The motion was carried.

The convention then adjourned till 3 P. M.

AFTERNOON SESSION.

REVISION OF THE CODE OF RULES GOVERNING THE CONDITION OF AND REPAIRS TO FREIGHT-CARS.

The convention was called to order at 3 P. M.

THE PRESIDENT—This meeting is called to revise the rules governing the condition of and repairs to freight-cars offered for interchange.

MR. FORNEY—The President requests me to read the report of the committee on nominations of officers for the ensuing year.

The report is as follows:

The committee on nomination of officers for the ensuing year, beg leave to offer the following ticket:

For President—B. K. Verbryck, of the Chicago, Rock Island & Pacific Railroad.

For Vice-President—William McWood, of the Grand Trunk Railway; John W. Cloud, of the Pennsylvania Railroad; E. W. Grieves, of the Baltimore & Ohio Railroad.

For Treasurer—John Kirby, of the Lake Shore & Michigan Southern Railroad.

For Executive Members—F. D. Adams, of the Boston & Albany Railroad; L. Packard, of the New York Central & Hudson River Railroad; E. B. Wall, of the Pittsburg, Cincinnati & St. Louis Railroad.

The Chairman requests me to announce that if any other three members wish to make nominations it is in order. If the nominations are to be acted upon to-morrow they must be made to-day.

THE PRESIDENT—The Executive Committee will now present their report on the Interchange Rules.

The following is the report:

REPORT OF THE EXECUTIVE COMMITTEE ON THE RULES, GOVERNING THE CONDITION OF, AND RI TO, FREIGHT CARS FOR THE INTERCHANGE TRAFFIC, ADOPTED BY THE MASTER CAR-BUILDERS' ASSOCIATION.

REVISED AT NIAGARA FALLS, N. Y., JUNE, 1886.

The Executive Committee propose the following Rules for adoption:

GENERAL.

RULE 1—Each Railway Company shall give to fo while on its line, the same care as to oiling and pack gives to its own cars.

DELIVERING AND RECEIVING CARS AT INTERCHANG

RULE 2—Cars must be delivered in good running returned in as good general condition as when received

RULE 3—Cars may be refused for any of the defects:

DEFECTS OF WHEELS.

a. Worn flat, exceeding $2\frac{1}{2}$ inches in length or diame

b. Worn flange, flanges less than one inch thick, flat vertical surfaces, extending more than $\frac{7}{8}$ tread.

c. Wheels cracked or broken in any other manner.

d. Shelled out; wheels with treads defective on circular pieces shelling out, leaving round, deepest at the edge, with a raised centre must not be condemned from this cause, spots are over $2\frac{1}{2}$ inches in length, or diame so numerous as to endanger the safety of the

e. Wheels chipped on the rim, leaving tread les inches in width when measured from the point $\frac{5}{8}$ inches above tread.

f. Wheels with flanges chipped, so that they are run.

g. The determination of flat spots, sharp flanges, thin flanges and chipped treads shall be made by a gauge of the following form:

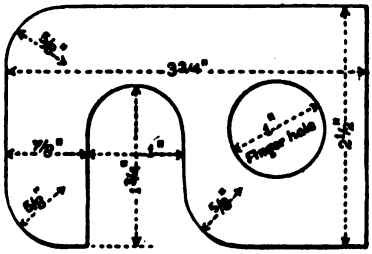


FIG. 51.

DEFECTS OF AXLES.

h. Axles bent or with journals cut.

i. Axles with journals of less diameter than the following limits:

60,000 lbs.	car	limit,	$3\frac{1}{2}$ in.
50,000 "	"	"	$3\frac{1}{4}$ "
40,000 "	"	"	3 "
30,000 "	" (or less)	"	$2\frac{3}{4}$ "

DEFECTS OF MOUNTING WHEELS ON AXLES.

j. Loose wheel.

k. Wheels out of gauge, or that measure less than 4 feet 5 inches between flanges, or less than 5 feet 4 inches over treads.

OTHER DEFECTS.

l. Brakes in bad order.

m. Brake wheels, steps, ladders or running boards in bad order, or insecurely fastened.

n. Drawbars or attachments in bad order.

o. Draft sills or draft timbers spliced.

p. Intermediate or outside sills recently spliced in a manner not prescribed by the Rules.

q. Leaky roofs on merchandise or grain cars.

r. Doors which are not sufficient protection again
storms.

s. Special or general defects of bodies or trucks, w
der cars unsafe to run.

RULE 4—A car with defects which do not render
to run must be accepted, but in such cases the co
whom such car is offered may require that a defect car
securely attached to the car, preferably on the inside of
timbers.

RULE 5—Defect-cards shall be 4½ inches by 6½ inch
the form shown below. They shall be printed on b
and shall be filled in on both sides with ink or indelible

(*Name of Road.*)

Car No.....Date.....

Initial..... .....Line.....

Will be received at any point on this company's line, wi
the following defects:

.....

.....

.....

.....Inspector at.....

RULE 6—Any Company finding a car with a de
attached may make the repairs noted by the card, and r
for same to the Company attaching card; the card to a
bill as voucher for the work done.

DEFECTS FOR WHICH OWNERS ARE RESPONSI

RULE 7—Roofs lost from cars on account of faulty
tion, shall be replaced at the expense of the owners.

RULE 8—Locks on cars are at owner's risk.

RULE 9—Wheels and axles used to replace those
worn out under fair usage will be charged to the Comp

ing the car. Wheels made flat by sliding, or wheels with treads or flanges chipped, are not to be considered as worn out under fair usage; such wheels must be replaced by the Company sliding or chipping them at its own expense.

RULE 10—Loose wheels may be replaced, or wheels out of gauge may be refitted, and charged to owners.

RULE 11—In the case of cars belonging to private parties or corporations, other than Railway Companies, the repairs of such parts as fail under fair usage, or from faulty construction, may be made by Railway Companies, and shall be paid for by the owners.

BILLS FOR WHEEL AND AXLE WORK.

RULE 12—Bills rendered for wheels and axles shall be in accordance with the following schedule of prices for material, with the proper debits and credits:

	NEW.	SECOND-HAND.	SCRAP.
One 36-inch wheel.....	$15 00	$10 00	$6 00
One 33-inch wheel...	11 00	8 00	5 00
One 30-inch wheel (or less)...	10 00	7 00	4 00
One axle.....	11 00	7 00	4 00

and with an additional charge of $1.50 for all labor, for each pair of wheels and axle renewed. If new wheels and axles are substituted for second-hand wheels and axles, proper charges and credits shall be allowed, although such substitution be made on account of only one loose or defective wheel, or a defective axle.

RULE 13—Bills for wheels and axle work shall be in the following form:

To ..... R. R. Co. Dr.

For Wheels and Axles used under ..... Cars. Month of ..... 188 .....

Date and Place.	Initial, Kind & Number of Cars.	Wheels or Axles Removed.				Shop Marks on Wheels or Axles.	Materials Used.				Net Charge.	Labor Charge.	Total Net Charge.
		Maker.	Date Cast.	Number	Cause of Removal.		Wheels.		Axles.				
							N'w	2d h'd	N'w	2d h'd			

Bills for wheel and axle work must make specific mention of each wheel and axle removed or applied.

Bills which do not embody all the information called for by the headings of the columns, may be declined until made to conform to the requirements of the rule. If no marks are found on wheels or axles removed, a notation to that effect must be made on face of bill.

RULE 14—In noting on bills the cause of removal of wheels and axles, the following terms shall be used:

Worn Flat—Flat spots exceeding 2½ inches in length or diameter. Care must be taken to distinguish this defect from "slid flat."

Worn Flange—Flanges less than 1 inch thick, or having flat vertical surface extending more than ⅞ inches from the tread.

Cracked Plate—Cracks in plate when not extending through hub to axle. Length of crack must be stated.

Cracked Hub—Cracks extending from axle outwardly through hub. Length of crack must be stated.

Cracked Brackets—Bills should state the number of brackets cracked.

Broken in pieces—

Shelled Out—Wheels with treads defective on account of circular pieces shelling out, leaving round flat spots, deepest at the edge, with a raised centre. Wheels must not be condemned from this cause, unless the spots are over 2½ inches in length or diameter, or are so numerous as to endanger the safety of the wheel.

Loose Wheel—

Out of Gauge—Bills should state the variation from limits prescribed in Rule 3.

Small Journal—Journal smaller than prescribed by Rule 3. Diameter of journal must be stated.

REPAIRING AND SETTLING FOR FOREIGN CARS.

RULE 15—Foreign cars if damaged shall be promptly repaired by the Company causing the damage; such repairs shall be thoroughly made, and the work shall conform in detail to the original construction (provided it can be determined from the car

itself), and with the same quality of material origina
new standard parts may, however, be used if agreed to.

RULE 16—Wheels on the same axle must be of
circumference.

New Wheels must not be mated with second-hand w
Prick-punching or shimming the wheel fit must
allowed.
Wheels applied must be marked on inside with date
cation.
The wheel seats of foreign axles must not be redu
wheels, but the wheels must be bored to fit axles.

RULE 17—The sills other than centre sills to which
bers are attached, may be spliced once and held by thr
bolts, as shown below.

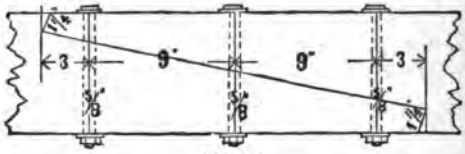


FIG. 52.

The splice may be located either side of body bolste
nearest point of any splice must not be within 12 inche

RULE 18—Any Company repairing foreign cars wi
material, and not in compliance with Rules 15, 16 and 1
liable for the cost of changing such car to the original
or to the requirements of Rule 17.

RULE 19—A Company using wrong materials in suc
shall place upon the car, at the time and place that the
done, a defect card, which defect card shall pass the ca
the owning road.

RULE 20—When either the bodies or trucks of
destroyed on a foreign road, the owners must be notifi
diately.

The Company destroying bodies or trucks shall have
whether to rebuild or settle for same.

RULE 21—If the Company destroying the car elects to rebuild, either body or trucks, or both, the original plan of construction must be followed, and the original kind and quality of materials used. The rebuilding must be completed within 60 days from the original date of damage or destruction. In such cases no allowance shall be made for betterments.

RULE 22—The settlement prices for new cars and trucks shall be as follows:

Box car, eight-wheel, 33 feet long or over	$450 00
" " 32 feet long or under	430 00
Stock car, eight-wheel, 33 feet long or over	450 00
" " 32 feet long or under	435 00
Gondola car, eight-wheel, drop-bottom, 20 tons or over	400 00
" " " 15 " less.	375 00
" " hopper bottom, 20 tons or over	450 00
" " " 15 " less.	425 00
" " plain, 33 feet long or over	350 00
" " plain, 32 feet long or under	300 00
Flat car, eight-wheel, plain, 33 feet long or over	300 00
" " " 32 feet long or under	290 00
Box car, four-wheel	230 00
Coal car, four-wheel, ordinary	205 00
Gondola car, four-wheel, drop bottom	305 00
Trucks, car, four-wheel, 1 pair	200 00

Depreciation due to age shall be estimated at 6 per cent. per annum, upon the yearly depreciated value of bodies and trucks; provided, however, that allowances for depreciation shall in no case exceed 60 per cent. of the value new.

Refrigerator cars and other freight cars designed for special purposes, not specifically referred to above, shall be settled for at special rates, as may be agreed to by the parties in interest, but the deduction for depreciation due to age shall be on the same basis as for regular freight equipment cars.

RULE 23—If only the body of a car is destroyed and the Company destroying it elects to return the trucks, they shall be put in good order and delivered free of freight or other charges to the nearest point on the road of the Company owning the car.

FURNISHING MATERIAL AND BILLING WORK D

RULE 24—Companies shall promptly furnish to e upon requisition, and forward free over their own road for repairs of their cars injured upon foreign lines. Re for such material shall state that it is for repairs of cars, numbering and lettering of such cars when possible.

RULE 25—Bills for work done on defect cards or fo furnished on requisition shall be on the basis of the charges and credits :

MATERIAL.	CHARGES.
Cast Iron.....per lb.	2c.
Malleable Iron..... "	5.
Bolts, Nuts and Forgings..... "	4.
Cast Steel..... "	9.
Brass Journal Bearings..... "	16.
Phosphor Bronze Bearings..... "	18.
Pine (Yellow, White or Norway).....per ft.	3.
Oak..... "	3.
Labor.....per hr.	20.

No percentage to be added for either material or lab

MISCELLANEOUS.

RULE 26—In rendering bills leased cars shall be belonging to Railway Companies whose name or init bear.

RULE 27—For the mutual advantage of Railway C interested, the settlement for a car damaged or destro private track shall be assumed by the Railway Compan ing the car upon such track.

RULE 28—Any Railway Company may become a pa Code of Rules by giving notice through one of its Officers to the Secretary of the Master Car-Builders' A

Any Railway Company which is a party to this Rules shall be bound by same through its successive

until one of its general officers files with the Secretary of the Master Car-Builders' Association its notification of withdrawal.

Acceptance or rejection of this Code of Rules must be as a whole, and no exception to an individual rule or rules shall be valid.

RULE 29—The Executive Committee of the Master Car-Builders' Association shall receive and consider all changes, amendments and additions to this Code of Rules which may be proposed to them during the year, and shall report all such proposals to the Association at the time of the Annual Convention and revision, with their recommendations in reference to same. In case of any dispute or question arising under these rules the same shall be referred to the Executive Committee, whose duty it shall be to decide the case. This decision shall be final and binding upon all parties concerned.

RULE 30—In the revision of these Rules by the Association, each Railway Company shall be entitled to one vote for each 1,000 8-wheel cars (or major part thereof) owned, or in process of purchase. Two 4-wheel cars shall count as one 8-wheel car. A two-thirds vote shall be necessary for adoption.

RULE 31—This Code of Rules shall take effect August 1, 1886, and shall be introduced for discussion and revision at one session of the Master Car-Builders' Association Convention each year.

MR. CLOUD—I would move you, Mr. Chairman, that the report be received, and be acted upon by taking up the articles *seriatim*, and voting upon them in the order in which they stand.

The motion was seconded by Mr. Wall, and carried.

MR. CLOUD—I am requested to announce, on behalf of the Executive Committee, that they have had a sub-committee look over the Rules of Interchange, and that sub-committee has taken them up and attempted to arrange matters that relate to one subject together, and has, as you see, placed them under headings for more convenient reference. The material contained in the old Rules of Interchange is almost all here, covered in one place or other, the main difference being in its arrangement. The Executive Committee, last Monday, considered this report of the sub-committee, in detail, and made some changes in it, and this is the form in which the Executive Committee proposes it to the Association for consideration. And I would move that the voting by cars be dispensed with unless called for, and that we proceed to adopt *viva voce* as long as division by cars is not called for.

The motion was carried.

THE SECRETARY read a list of representative members, re
each member to state, when his name was called, the number of
he represented.

MR. WOOD took the chair.

THE CHAIRMAN—We have arrived at a very important
our proceedings, the consideration of the Interchange Rules.
are aware, there has been a sub-committee appointed to r
rules, and their report has been gone over by the Executive Co
Very great care has been taken in preparing this report to m
complete as possible, so as not to take up the time of the Co
more than is necessary. But it is very important that the r
gone over very carefully, and that you go away satisfied that
just the kind of rules you want for the interchange of cars. It i
that we go over them *seriatim*.

MR. ADAMS—Do all the active members have a vote in thi
the representative members?

MR. FORNEY—There is a little confusion in regard to
Rule 30, which is the last one here, it says: "In the revision
rules by the Association, each Railway Company shall be entitl
vote for each 1,000 8-wheel cars (or major part thereof) owned
cess of purchase. Two 4-wheel cars shall count as one 8-wheel
two-third vote shall be necessary for adoption."

MR. ADAMS—That is the proposed rule. That is not th
are working under.

THE CHAIRMAN—The original rule was:

"*Resolved*, That in voting upon the adoption of rules to g
condition of, and repairs to, freight-cars offered for interchang
including payment for cars in case of their destruction, the vot
railroad is to be governed by the number of 8-wheel freight
road owns, and two 4-wheel cars represent one car, and that e
cars, or the major part thereof, is entitled to one vote; an
require two-thirds of all the votes present to approve."

It does not say anything here about an active member, how

MR. ADAMS—Is there anything in the Constitution referri

THE CHAIRMAN—I think not.

MR. FORNEY—It is a general principle that an active mem
right to cast a vote on every subject coming before the Associat
last year the Interchange Rules were made part of the busine
Association. I should think that it would now require some
action to deprive an active member of his vote on the adoptio
of these rules. Speaking of representative members, the Co
says: "Such member shall have all the privileges of an active
including one vote on all questions, and, in addition thereto,
all measures pertaining to the adoption of standards or the ex
of money have one more vote for each full one thousand cars
owned, or which are in use, or in process of purchase by the
system which he represents."

MR. CLOUD—The very fact that we resolved this interchange meeting into the Master Car-Builders' Association gives them one vote, and in addition to that representative members have an additional vote for every thousand cars.

THE CHAIRMAN—Then is it understood that active members have a vote? If no one objects to it, I shall say that an active member has a vote, independent of the representative members.

We will proceed with the rules.

MR. WALL—There seems to be another little misunderstanding in connection with this, and that is if every active member has one vote, whether a representative member has a vote also as an active member. If he has one vote as an active member and represents a thousand cars, that would give him two votes.

MR. ADAMS—Does it make a man an active member if he is sent here as a representative member only?

THE CHAIRMAN—I think that this is plain enough; that it gives every member one vote whether he is an active or a representative member, and in addition thereto it says every representative member shall have one vote more for every thousand cars he owns.

If there is no further discussion on the question, we will proceed with the rules (reading):

General.

"Rule 1. Each Railway Company shall give to foreign cars, while on its line, the same care as to oiling and packing that it gives to its own cars."

Mr. LENTZ—Preceding the word "General," on this second page, I should say that the words on the first page should be inserted—"Code of rules governing the condition of, and repairs to, freight-cars for the interchange of traffic, adopted by the Master Car-Builders' Association. Revised at Niagara Falls, June, 1886."

THE CHAIRMAN—I think that is the way the rules usually are gotten up.

MR. LENTZ—My idea is simply to have the form we prescribed here the proper form in which the Rules shall be printed.

THE CHAIRMAN—If there is no objection to the rule as read, I will proceed to Rule 2:

Delivering and Receiving Cars at Interchange Points.

"Rule 2.—Cars must be delivered in good running order, and returned in as good condition as when received."

MR. RHODES—Rule 2 reads: "Cars must be delivered in good running order, and returned in as good condition as when received." Old Rule 6 had something I do not find in any other part of this Revised

Code, and perhaps the committee may be able to give a good reason for leaving it out. The last clause of Rule 6 read:

"In case the receiving and delivering inspectors disagree as to the condition of the car, the case is to be immediately referred to their superior officers."

There is nothing in the new rules stating what, in case of disagreement between the inspectors, they are to do.

MR. CLOUD—The committee considered that point, of course, and the reason for leaving it out seems good. It is that that partook of the nature of instruction to men whom we have no right to give orders to, that it is the course they would naturally follow, anyhow, and therefore it would be expletive and rather improper, as it would be, as I said, in the nature of orders.

It was agreed that the rule should stand as read.

The Chairman proceeded to read Rule 3, as follows:

"RULE 3.—Cars may be refused for any of the following defects:

DEFECTS OF WHEELS.

"*a*. Worn flat exceeding 2½ inches in length or diameter."

MR. SOULE—Why was the change made? The sub-committee wanted to provide that wheels with two flat spots exceeding 2½ inches in length or diameter, could be made the occasion for refusing a car. If you follow this rule literally you cannot refuse a car on account of a wheel with a spot made flat by sliding. This distinctly states "worn flat exceeding 2½ inches in length or diameter." I have not here a copy of the original report to the Executive Committee, but I am sure it read, "worn or slid wheels with flat spots exceeding 2½ inches in length or diameter."

MR. CLOUD—I think that is a clear case. I will explain to Mr. Soule that the Executive Committee wished to conform to the order of statement of defects, which is given under Rule 14. We wanted to follow the nature of the defects in the same order in both cases, as nearly as possible. I think we overlooked that, and we should introduce here "worn or slid flat exceeding 2½ inches in diameter." We might add to it, "worn flat or slid flat."

THE CHAIRMAN—It is a mere matter of wording. It is a defective wheel, whether it is worn flat or slid flat, a defect for which you would refuse a car.

MR. CLOUD—I would move that we insert there the words "or slid."

Agreed to.

THE CHAIRMAN read section *b*, as follows :

"Worn flange, flanges less than one inch thick, or having flat vertical surfaces extending more than $\frac{7}{8}$-inch from tread."

MR. SOULE—I would like to state to the members that quite a number of the replies received to the circular issued by the sub-committee, suggested that it was unnecessary to have that limit of thickness of flange as great as one inch, and that it would be entirely safe to reduce it to fifteen-sixteenths. The weight of opinion was not quite enough to justify us in recommending it, but I mention it for the sake of bringing out discussion.

MR. WALL—I move that it be adopted as read.

Agreed to.

The Chairman read section *c*, as follows :

"Wheels cracked or broken in any other manner."

MR. CLOUD—I move the word "other" be stricken out. It is a misprint.

Agreed to.

The Chairman read the three succeeding sections, as follows :

"*d.* Shelled out; wheels with treads defective on account of circular pieces shelling out, leaving round, flat spots deepest at the edge, with a raised centre. Wheels must not be condemned from this cause, unless the spots are over $2\frac{1}{2}$ inches in length or diameter, or are so numerous as to endanger the safety of the wheel.

"*e.* Wheels chipped on the rim, leaving tread less than $3\frac{3}{4}$ inches in width, when measured from the flange at a point $\frac{5}{8}$ above tread.

"*f.* Wheels with flanges chipped so that they are unsafe to run."

MR. RHODES—"Chipped so that they are unsafe to run;" is not that leaving it a little too indefinite? What we want in our rules is to give the inspectors instructions; and in some of the other rules there are specifications as to when things are unsafe. I ask the committee why they omit to specify when this is unsafe.

THE CHAIRMAN—The matter was talked over by the Executive Committee and the importance of it fully realized, but it was a very difficult matter to define.

MR. CLOUD—We could not think of any way of doing it. If Mr. Rhodes would suggest a way we would be very glad to adopt it.

THE CHAIRMAN read section *g*, as follows :

"The determination of flat spots, sharp flanges, thin and chipped threads shall be made by a gauge of the fo form : (see fig. 51, page 97).

MR. CLOUD—I would like to hear from Mr. Soule question.

MR. SOULE—I am prepared to recommend a modificati form originally proposed. A modified form is illustrated on th board, and also by the gauge which you (the Chairman) hold right hand (represented by Fig. 53). I will explain the objec

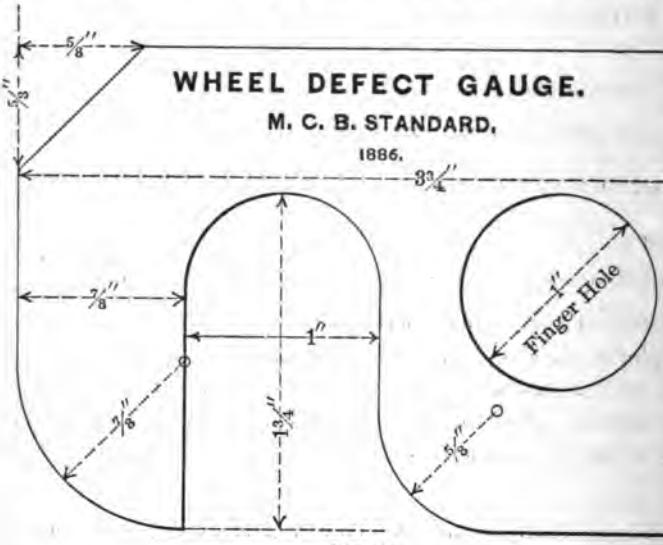


FIG. 53.

modification. You will notice in the lithographed cut, the up hand corner shows a quadrant of five-eighths radius. With the form of flange and throat, it would be difficult to get that gauge had a five-eighth radius there, equal to bringing that five-eigh up so as to strike the flange, so that it would not be possible to up with that fillet in it ; but by chipping off that corner, makin diagonal of a square of five-eighths, it was then possible to sh gauge up on the tread of the wheel, so that that point comes in The other modification consists in changing the radius of thi from five-eighths to seven-eighths of an inch. That is for a simila —because in wanting to determine a sharp flange like that, if th a five-eighth inch curve there, the point of the curve right *her* bring up against the flat flange before this point *here* did (refe sketch.) *This* line being seven-eighths of an inch from *that* line, it i that this point *here* should always be admitted freely against the

tion of the flange. Therefore, I offer as an amendment, this form of gauge which is exactly represented in the steel sample which the President has.

MR. CLOUD—I second Mr. Soule's motion, that the gauge, as explained by him, be adopted instead of the one shown in the cut.

Agreed to.

THE CHAIRMAN read section *h*, as follows :

DEFECTS OF AXLES.

Axles bent or with journals cut.

MR. McILWAIN—Before we proceed to axles, permit me to call attention to a repetition that I observe in the re-codification of the rules. For instance, shelled out and worn out—we have it in this rule, and then we have it again in Rule 14. Rule 14 explains what shelled out is. It should not be explained here.

THE CHAIRMAN—One shows the defects for which a car may be refused, and the other shows the way a bill should be made out.

THE CHAIRMAN read section *i*, as follows :

Axles with journals of less diameter than the following limits :

60,000	lbs.	car.....	limit,	3½ in.
50,000	"	.....	"	3¼ "
40,000	"	.....	"	3 "
30,000	"	(or less).....	"	2¾ "

A MEMBER—I move that for a 60,000 lb. car the limit will be 3½ inches.

Agreed to.

MR. MACKENZIE—I move that it be the same, 3½ inches, for a 50,000-lb. car.

Seconded.

MR. CLOUD—It seems to me that would be a great deal larger than is necessary for a limit—3½ for a 50,000-lb. car. I hope the motion will not prevail. It seems to me it is unnecessary to call for a limit of such a large size for a 50,000-lb. car.

MR. MACKENZIE—It may seem strange that a man should put a 4-inch axle under a 50,000-lb. car; but it is done. I am satisfied that the axles are too small, and we are getting evidence of it every day.

MR. WALL—These rules are not gotten up to establish what is good practice. They do not lay down any specifications of what shall be done in the future, but they lay down what shall be accepted. Now there is a very large number of axles in existence under 50,000-lb. cars that are 3½ inches, put in at 3½ inches. That would rule them all out.

MR. CLOUD—What does Mr. Mackenzie understand these sizes to be? From his last remark I think he misconstrues this.

MR. MACKENZIE—I think not.

MR. CLOUD—I judged so from the last remark. I wish it understood that these are limits, and not the sizes of journals pu cars.

MR. ADAMS—Mr. Mackenzie's idea is that when an axle is 3¼ inches with 50,000 pounds on it, he considers it unsafe.

MR. WALL—So do we.

MR. ADAMS—You run them all the same.

MR. WALL—So do you. Sit down. We all agree (Laughter.)

THE CHAIRMAN—The question before the house is on t for a 50,000-pound car. As the rule reads the limit is 3¼ inch Mackenzie's motion is that that should be 3¼ inches.

MR. SNOW—I move an amendment to that. Call it 3¼ inc Seconded.

MR. MILLER—What is the size of the journal for a 50,00 car? Is the Master Car-Builders' standard axle 3¼ by 7 inches?

MR. CLOUD—I do not care what it is. It may be anythin we say if a car comes along with a journal down as low as 3¼ inch 50,000 pounds, that it should be rejected.

MR. LENTZ—We put a 4-inch axle under the 50,000-pound are building.

THE CHAIRMAN—We must acknowledge that in the inte of traffic we are running a very large number of journals that e knows are too small, and that very frequently give trouble. down to 2¾—and I don't know about 50,000 pounds, but the prob are that the weight is away up in that neighborhood. If you m limit too large, of course you will interfere very seriously with

MR. MARDEN—I believe that these limits are too small. that the limit for 50,000 pounds should be 3¼ inches in diamete believe that the limit for 40,000 pounds should not be any less inches. If our inspectors find that load on a car they are ob take it. We are having too many broken journals, altogether, an have not got under them journals of that size they should entrusted with that load. We know that often local cars have journals and are loaded sometimes with 15 or 20 tons, and we h to have something for our inspectors to be governed by. I thi limits are too small.

There is one other matter I would like to understand. We the limit for 6,000 pounds shall be 2¾ inches, and the limit fo pounds shall be 3¾ inches, and the limit for 5,000 pounds sh inches, and the limit for 40,000 pounds shall be 3 inches—suppo is loaded with 55,000 pounds, where does the limit strike there?

THE CHAIRMAN—Anything above 40,000 pounds would go up to the next figure above.

MR. MARDEN—That is misconstrued a great many times inspectors.

THE CHAIRMAN—I think that the understanding is that the figures would read 50,000 pounds or under.

MR. CLOUD—I understood it meant that the matter should be decided by the marked capacity of a car, supposing that overloading to any dangerous extent would be guarded against, not only by the party on whose road it may be loaded, and the inspector's gauge, he not knowing the weight in the car, would be the capacity marked on the car.

MR. SCOTT—I move to amend the motion by making the limit for a 50,000 pound car 3¼ inches.

Seconded.

THE CHAIRMAN—I will put the amendment first—50,000 pounds to be 3¼ inches.

The amendment was carried.

MR. SCOTT—I move you, sir, that the next (40,000 pounds) be changed to three and one-quarter inches.

Seconded.

MR. RHODES—As I understand, the wording is to be "less than" these figures which are named, the figures named being the limits—journals of less diameter than the following limits.

THE CHAIRMAN—I thought you were referring to the capacity. It is axles with journals of less diameter than these limits. The question is on the amendment to make the limit three and one-fourth inches for cars of 40,000-pounds diameter.

The amendment was carried.

MR. SCOTT—I move that the next (30,000 pounds) be fixed at three inches.

MR. CLOUD—I think that will create a great deal of stagnation on many roads if it is carried. If you want to make the journal not less than three inches there will be a good deal of stagnation.

MR. KIRBY—I make the amendment to the gentleman's motion to let it remain at two and three-fourths.

THE CHAIRMAN—I will put the amendment first—a 30,000-lb. car, or less, to be two and three-fourths limit.

The amendment was carried.

The Chairman read sections *k* and *j*, as follows:

"*j*. Loose wheel.

"*k*. Wheels out of gauge or that measure less than four feet five inches between flanges, or less than five feet four inches over treads."

MR. RHODES—Why did the Executive Committee recommend a limit between flanges of four feet five inches? We all know pretty well the importance of that, that it is dangerous to get cars that measure less than that from the wing of the frog to the guard-rail, and that four feet five inches is the point of safety. Another point that is just as important is not to get it too wide between flanges. If you get that guage too

wide between flanges your flange is apt to take the other s
frog-point, and it seems to me that we ought to have a limit he
making any motion I would ask the Executive Committee if th
reason for leaving that point out.

MR. CLOUD—There should be a comma after that—"wh
gauge." Our idea was that any other conditions would be
the statement "wheels out of gauge."

MR. MARDEN—I think that there should be something
nite with regard to wheels out of gauge. There has been co
difficulty already arising on account of a misunderstanding, c
disagreement, in regard to the width at which we could run w
standard track and over Pennsylvania track, and cars have be
us and offered other roads that are 4 feet 6 inches between flan
a number of them, and there are large numbers of cars runni
4 feet 5⅜ inches between flanges to-day, and it has got to be q
ous question with us whether we shall receive those cars.

MR. BLACKALL—Is it understood that the rule is to
representing the point to measure from?

MR. LENTZ—There will be a form like that shown by F

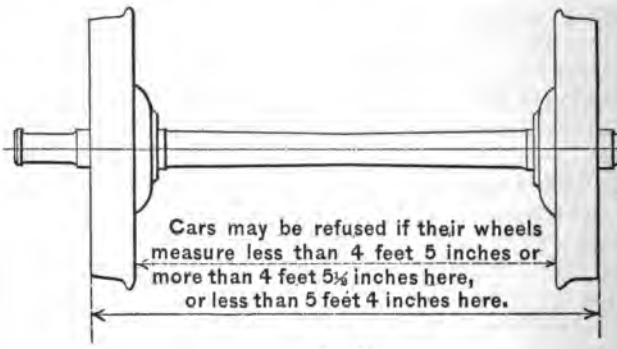

Cars may be refused if their wheels
measure less than 4 feet 5 inches or
more than 4 feet 5⅛ inches here,
or less than 5 feet 4 inches here.

FIG. 54.

THE CHAIRMAN—That as represented on the blackboa
5 inches inside the flanges, and 5 feet 4 inches outside the tre

MR. MARDEN—That gives the narrowest gauge that can
does not say anything about the widest gauge that can be run

MR. LENTZ—I move that the article stand as it reads.

Seconded.

MR. RHODES—I have made a rough sketch showing
question is; and what I want to endeavor to explain is, why
track people, and the 4 feet 8½ track people, can both adopt
feet 5 inches between flanges. My figures are not very pl
you will bear with me, *here* (referring to sketch) is the 4 fee
The distance between guard-rail and gauge-rail is 1¾ inches
tance between guard-rail and wing of frog is 4 feet 5 inches

tance between frog-point and wing of frog is 1¼ inches. We take twice 1¼, which is 3½. We add 4 feet 5 inches, and we get our gauge, 4 feet 8½ inches. The same way with a 4 foot 9 track. The distance between guard-rail and gauge-rail is 2 inches; 4 feet 9 inches between guard-rail and wing of frog; twice 2 inches is 4 inches; 4 foot 5 gives 4 foot 9. At one time the railroads had a 4 foot 9 track, and the limit was 4 feet 5½ inches between flanges. Some time ago that was changed. In making the change, when they had it 4 feet 5½ inches, they had the distance between gauge-rail and guard-rail 1¼ inches—they broadened out their guard-rail 2 inches in order to enable them to adopt the 4 foot 5 limit. That explains why we make 4 feet 5 inches our limit—simply because that is the distance between the guard-rail and the wing of the frog-rail. Some will say that on a 4 foot 8½ track, an inch and three-quarters is not the distance; that it is more than that—perhaps three inches. I will say further that if that is the case, it makes it all the more important that we have this maximum wide gauge. Here is the same rough sketch. Now, with 4 foot 8½ track, we have our guard-rail distant an inch and three-quarters from the wing of the frog. This being 4 feet 5 inches, we add the distance from the wing of the frog to the point—1¼ inches—and we get 4 feet 6¼ inches. Now we take our maximum gauge, which I propose recommending presently, of 4 feet 5½ inches. We add the thickness of our flange, which we have adopted this morning—1¼ inches—and it gives us 4 feet 6¼ inches as the distance to the frog-point. If we go beyond that, the frog-point has got to take the full force. If we make it 4 feet 7 inches, the frog-point will be ruined every time. With a 4 feet 9 inches track, we say what should be their limit. They can go further than we can. They have from the guard-rail to the wing of the frog 4 feet 5 inches, and 2 inches here—making 4 feet 7 inches. Now, between their wheels, they can go to 4 feet 5¼ inches, one-quarter of an inch further than we can, and then, with that inch and a quarter, they will get 4 feet 7 inches, the distance from that to the frog-point.

I would move that section *k* be amended so that it will read:

"Wheels that measure less than 4 feet 5 inches or more than 4 feet 5½ inches between flanges, or less than 5 feet 4 inches over treads."

I have left out "out of gauge."

Seconded.

MR. CLOUD—I would support the substance of this resolution, but I think that the first part of it would commence better and be consistent with Rule 14 if it read: "*k*. Out of gauge or," etc., as Mr. Rhodes read it. We are now under the heading of defects of mounting wheels on axles.

MR. RHODES—I will accept that amendment.

THE CHAIRMAN—Then it will read: "Wheels out of gauge, or that measure less than 4 feet 5 inches or more than 4 feet 5½ inches between flanges——"

MR. MARDEN—I would move an amendment to that—that the maximum limit be placed at 4 feet 5¼ inches instead of 4 feet 5½ inches.

Seconded.

MR. ADAMS—I would like to propose an amendment amendment. If I was going to fix it to suit me, I should go them, and I would move that it be ⅛ instead of ¼ or 5½.

MR. SCOTT—I would ask what assurance we have th makers are going to make wheels to this gauge.

THE CHAIRMAN—This is not supposed to interfere making of the wheel.

MR. SCOTT—We have all kinds of flanges now.

THE CHAIRMAN—We do not propose to have all kinds o with what we have adopted this morning.

MR. MARDEN—I do not think there is any doubt but v measurement should be made on the outside of the flange. Bu can pass more safely with worn flanges than they can with full on the maximum gauge.

MR. McKENZIE—When we get beyond 4 feet 5½ inches flanges, we shall hear from them pretty quick.

MR. ADAMS—I am a little anxious to have it broader, for t that we have a great many wheels in New England of 4 feet 8 gauge, and we have lots of old wheels that vary materially in th and in addition to that, we frequently have wheels from forei come on to our road that vary very much. Now, we want to l limit so adjusted as to make it easy to keep running as many ca sible. That was the object of it.

THE CHAIRMAN—I will put first Mr. Adams' amendm than 4 feet 5 inches or more than 4 feet 5⅛ inches.

The amendment was lost.

Mr. Marden's amendment—"or more than 5¾ inches" was

THE CHAIRMAN—Now the question is on the original m Mr. Rhodes: "out of gauge or that measure less than 4 feet 5 more than 4 feet 5½ inches between flanges, or less than 5 feet over treads."

The motion was carried.

MR. MARDEN—There is one thing else that should come at this time. I want to say to the gentlemen that the next oper be a large stoppage of cars, both foreign and our own, as a con of carrying out this rule. If the inspectors carry out that rule, find, in my opinion, more trouble in traffic than we have had at heretofore in my recollection. There is another thing that sho in right here, and that is, if cars are found at any of the int points inside those limits, the road finding those cars should privilege of changing the wheels to gauge and making a charg There should be some way of having this fixed.

A MEMBER—That is all fixed in here.

THE CHAIRMAN—We will proceed—"OTHER DEFECTS"

MR. WALL—One moment. If you will give me the oppor would like, in view of the fact that Mr. Rhodes has added dimension, to move that Mr. Rhodes be requested to furnish to

retary of the Association a sketch to be inserted in the body of the rules representing these dimensions which he has just supplied. I think it had best come from him because he has this other dimension.

Agreed to.

[Fig. 54 represents the sketch referred to.]

The Chairman read the remaining sections of Rule 3, as follows:

l. Brakes in bad order.

m. Brake-wheels, steps, ladders or running-boards in bad order, or insecurely fastened.

n. Drawbars or attachments in bad order.

o. Draft-sills or draft-timbers spliced.

p. Intermediate or outside sills recently spliced in a manner not prescribed by the Rules.

q. Leaky roofs in merchandise or grain cars.

r. Doors which are not sufficient protection against fire or storms.

s. Special or general defects of bodies or trucks, which render cars unsafe to run.

No amendment to these sections was proposed, and the Chairman proceeded with the reading, as follows:

"RULE 4—A car with defects which do not render it unsafe to run must be accepted, but in such case the company to whom such car is offered may require that a defect-card shall be securely attached to the car, preferably on the inside of cross-tie timbers.

"RULE 5. Defect cards shall be 4½ inches by 6½ inches, and of the form shown below. They shall be printed on both sides and shall be filled in on both sides with ink or indelible pencil.

(*Name of Road.*)

Car No.....Date.....

Initial.....Line.....

Will be received at any point on this company's line, with the following defects:

.....

.....

.....

..... Inspector at .....

MR. RHODES—I would move that in the lower left-hand corner of the card the following be inserted:

"NOTE.—Fill in defects on both sides with ink or indelibl
Attach this card securely to the inside cross-tie frame."

You understand, I want a note put in the left-hand corne
card. Our reason for that is that we hire as inspectors a good m
who are not familiar with the rules, and they cannot grasp all th
the same as we do here; and many times in their hurry they do
to know how that card is to be filled out. A note ought to be
with it explaining the use of the card. Then there will be n
why a man should not fill it out on both sides, or why he sh
follow the instructions.

MR. LENTZ—In order to make that note conform to Rule 4,
propose that the word "frame" there be "timber."

MR. RHODES—I accept that amendment.

The motion as amended was carried.

The CHAIRMAN proceeded with the reading as follows:

"RULE 6.—Any company finding a car with a defe
attached, may make the repairs noted by the card and ren
for same to the company attaching card; the card to acc
bill as voucher for the work done.

"DEFECTS FOR WHICH OWNERS ARE RESPONSIBLE

"RULE 7.—Roofs lost from cars on account of fau
struction shall be replaced at the expense of the owners.

"RULE 8.—Locks on cars at owner's risk.

RULE 9.—Wheels and axles used to replace those br
worn out under fair usage, will be charged to the c
owning the car. Wheels made flat by sliding, or whee
treads or flanges chipped, are not to be considered as w
under fair usage; such wheels must be replaced by the c
sliding or chipping them at its own expense.

MR. FORSYTH—I would like to amend that by adding, "
wheels conform to the gauges provided for in section *k* of Rul
Seconded.

MR. MACKENZIE—It appears to me that that is not nec
this rule. We certainly should not receive cars on our line if
not of the right limit.

MR. RHODES—I think there is a little misunderstandi
what is meant by this clause. I do not know whether Mr.
has expressed it in the right way. What Mr. Forsyth mean
if the tread of the wheel is chipped and does not conform
inspector's limit gauge which we have adopted, that the
owning the car should pay for the wheel; and the same way

flange in case the flange is chipped and does not conform to the inspector's limit gauge. Though the chipping is done on a foreign road the owner of the car should pay for the wheel.

THE CHAIRMAN—You better write that out (to Mr. Forsyth).

MR. SCOTT—I think that amendment is unnecessary. It seems to me that parties receiving that car ought to take care of it. They have received it with these defects. If after that there is any difficulty about it, I think the party that runs the car ought to pay for it. It seems to me it would complicate the matter.

MR. RHODES—Later on you will find where wheels are out of gauge, the company is allowed to press them on to gauge and charge the company owning the car. Now it seems to me that if they are out of gauge on the track and become chipped on the flanges or chipped on the rim, we ought to have the privilege of charging those to the owner of the car, and that they ought not to be charged to the road on which they are chipped. It is not the fault of the road where the chipping occurs ; it is the fault of the wheels not gauging properly.

MR. SOULE—Perhaps Mr. Rhodes and Mr. Forsyth overlook the fact that we have just adopted a revised rule, in which it is made possible to refuse cars for these very defects. If wheels are out of gauge we can refuse them. If we avail ourselves of the privilege of that rule, it will be necessary at any time for the company to be called upon to renew chipped treads with the wheels out of gauge.

MR. RHODES—May I ask Mr. Soule, if a road receives a car with the wheels out of gauge, and wants to put them to the gauge, whether it has the privilege of charging it to the company owning the car.

MR. SOULE—It has, if the rule is adopted.

THE CHAIRMAN—That is covered ; and as I understand Mr. Forsyth's motion, it is merely to cover the defect of his inspector. In the first place, you have the privilege, the right, to stop a car if it is out of gauge. But supposing you do not stop it, and it becomes chipped on the tread or on the flange from being out of gauge? Your inspector should not have received it. You merely want to cover up his defects.

MR. ADAMS—I do not suppose it is expected that any railroad can keep inspectors enough to gauge all the cars received. Consequently we are very liable to get wheels that would be out of gauge. I think that Mr. Forsyth and Mr. Rhodes are right. It seems to me that if wheels are run badly out of gauge, or out of gauge beyond these limits which we fix, that the owners ought to be responsible for defects resulting from their so being out of gauge.

THE CHAIRMAN—Rule 9, then, will read as amended by Mr. Forsyth's motion :

"Wheels and axles used to replace those broken or worn out under fair usage, will be charged to the company owning the car. Wheels made flat by sliding, or wheels with treads or flanges

chipped, are not to be considered as worn out under fai
such wheels must be replaced by the company sliding or
them, at its own expense; *provided the chipped wheels*
to the limit gauge provided for in section k of Rule 3."

MR. RHODES—To avoid repetition there, I would sugge
read: "provided the chipped wheels conform to the limit gaug
in section *k* of Rule 3."

MR. FORSYTH—I accept that.

The amendment was lost.

MR. RHODES—I call for a vote by cars. I do not think
bers were giving the matter attention.

MR. MACKENZIE—If he will amend that so as to make
charged to the parties putting the wheel under the car, it will
acceptable. The Lake Shore, for instance, puts a wheel und
our cars, and it goes on a foreign road and is out of gauge and
chipped; now are we to stand the cost of the imperfect workm
the Lake Shore people?

MR. KEELER—I think that the rule as it now reads is mo

THE CHAIRMAN—If Mr. Rhodes insists on a vote by ca
take it.

MR. RHODES—No, sir; I am not anxious about it. I wit

THE CHAIRMAN—Then the addition to Rule 9 is lost.

The Chairman read the following rules:

RULE 10.—Loose wheels may be replaced, or wheel
gauge may be refitted, and charged to owners.

RULE 11.—In the case of cars belonging to private pa
corporations other than railway companies, the repairs
parts as fail under fair usage, or from faulty construction
made by railway companies, and shall be paid for by the

MR. KIRBY—I would like to offer a substitute for that.
like this:

"In the case of cars belonging to private parties, or cor
other than railway companies, or that are not cared for or cont
a railroad company, the repairs to such parts as fail under fair
from faulty construction may be made by railway companies
be paid for by the owners."

Seconded.

MR. ADAMS—What does Mr. Kirby mean by the words
for by a railroad company."

MR. KIRBY—For instance, a Merchant's Despatch car. T
are not lettered "Lake Shore" or "New York Central" or "
Central." They are Merchants' Despatch Transportation C
cars, and they are cared for by the New York Central Railroad C
That is an illustration of what I mean.

MR. ADAMS—Does the New York Central Railroad Company charge every cent of their repairs to the Merchants' Despatch Company —and is not the Merchants' Despatch Company a private corporation as much as the Union Tank Line? We claim that the Merchants' Despatch Company is a separate private corporation run by its own company, its own men employed to do the business. They collect their own money and divide their own profits. I do not say that they are not made up of New York Central officers; but I say they are a distinct and separate corporation from the New York Central Company entirely. Their cars are not rated in the New York Central lines, and I think they ought to pay just as much as any other private corporation.

MR. KIRBY—Does the Merchants' Despatch and Transit Company pay for the repairs of their cars made by other railroad companies?

MR. ADAMS—No; they do not.

MR. KIRBY—Do you make bills against them?

MR. ADAMS—I do. We have some thousand dollars charged to them now, and they have refused to pay, on the ground that they are cared for by the New York Central Railroad Company and should be settled for as Central Railroad cars. Now, we take the ground that they are not, and we know what we are talking about, too.

MR. HITCHCOCK—I would ask Mr. Adams if his charges for repairs on those cars are under the rules? Do you make any difference if you repair line cars? Or do you conform to the prices laid down in these rules for castings and material?

MR. ADAMS—We charge to the Merchants' Despatch Company just the same as we charge to a Refrigerator Company, the Armour, or any other private company, such repairs as ordinary running repairs, worn brasses, brake-shoes, or any defect caused by faulty construction or decay. If we damage a Merchants' Despatch car, we repair it just the same as we would any other car.

MR. HITCHCOCK—If you made repairs to a car belonging to that company and similar repairs to a car belonging to the Connecticut River Road, would you charge each party the same price for repairs?

MR. ADAMS—I think we make the bills to them on the same basis as we do to others, as far as the prices are concerned. We are willing to make it just as easy for these companies as we can; but we claim that any road which is not a reciprocating road has no claim upon railroad companies to go to this expense.

MR. BRADY—I am compelled to differ from Mr. Adams, and I will say that the New York Central does care for and control the M. D. T. cars. Mr. Adams says his bills have never been paid, and I do not think the M. D. T. Company have ever paid any bill from any railroad company. The New York Central cares for thousands of freight-cars, and I believe does more work for foreign cars, without pay, than any other road in the country. The equipment of the M. D. T. Company is voted on by me at this meeting. The head of the department I represent takes care of the M. D. T. cars. The National Despatch line is cared for by

the Central Vermont. There are eight or nine other private co
cared for and controlled by other railroad companies. In sup
this resolution, Mr. Chairman, I think it is no more than fair t
should be stated very plainly—we assume the responsibility of
D. T. cars. That is sufficient. We have 34,000 other cars. We
outlet from the East to the West, and we repair thousands of cars
ought not to, I think. I am surprised that Mr. Adams should m
statement which he did make. The New York Central has, and
has had since the formation of the line, control of those cars. I
know anything about division of profits, but I know it is a Ne
Central corporation, cared for and controlled by that company.

MR. CHAMBERLAIN—I move as an amendment to Mr.
motion, that Rule 11 be adopted as printed.

MR. ADAMS—I want to answer one statement Mr. Bra
made. The New York Central is a very unfortunate company,
having to repair so many thousand cars which they ought not to
sorry for them. But Mr. Brady's statement that they care for
does not alter the fact at all. This is a matter, of course, that
settled by our general officers; but it is a matter that the general
of the road I represent understand as I have stated. Our P
and General Manager understand it just as I do, and we have tal
matter over. I know that Mr. Buchanan states that they care fo
cars, and consequently they should be recognized as New York
cars. But that does not make the fact by any means. The state
a thing does not make it a fact. Now I have heard Mr. Garey s
not know whether he is present or not), but, I have heard hi
me, time and time again, "we charge everything we do, and coll
the Merchants' Despatch Company." Now, I want to know
Boston & Albany, or any other road, should be compelled to
that the New York Central collects money for. I cannot unders
I do not know any reason for it.

THE CHAIRMAN—I would say just here that I do not thi
this rule is specially concerned with the ownership of the Me
Despatch Transportation Company's cars. (Applause.) It has
to do with it whatever.

MR. ADAMS—Perhaps I owe an apology for that point. I
not have alluded to them, if Mr. Kirby had not made them an e

MR. BLACKALL—Are the Merchants' Despatch cars rep
in the list of New York Central cars?

THE CHAIRMAN—It is so stated by Mr. Brady.

MR. ADAMS—I claim they have no right to vote on them.

MR. BLACKALL—If the New York Central cares for t
seems to me they should either be thrown out or represented he

MR. GAREY—I would explain my position, which Mr.
assailed a few minutes ago. The Merchants' Despatch Transp
Company is simply a big agent of the New York Central Railro
pany. If it chooses to charge to the Merchants' Despatch Tra

tion office any bills against it, it has a perfect right to do so, and to pay bills through that office. If it chooses to keep a separate account there in lieu of keeping it in its own office, it has a perfect right to do so. I have no interest whatever in these rules, but as a matter of justice it would appear to me that those cars ought to be represented, and also any other private lines which are controlled and cared for by railroad companies that see that their bills are paid.

THE CHAIRMAN—The motion before the house is Mr. Kirby's amendment, which I will ask the Secretary to read.

The Secretary read Mr. Kirby's amendment.

MR. CHAMBERLAIN—I move as an amendment to Mr. Kirby's motion that Rule 11 be adopted as printed.

Seconded.

MR. CLOUD—I do not think we ought to rush this through, right away, in that shape, if we can get good reasons for what is wanted. I admit that I do not understand exactly what the point is that is to be gained by the addition, and it seems to me that it is not clearly expressed. I would like to ask Mr. Kirby if it would cover the ground that he wants covered if we should say at the end of Rule 11, "and shall be paid for by the owners or parties who care for the cars."

MR. KIRBY—I presume that would cover the ground.

MR. CLOUD—If there are reasons specially applied to this case why that should be put into the rules, I do not know why we should not admit it. But I should very much rather see the rule left as it is, so far as it goes, and add the phrase, "or by parties who care for the cars." Will Mr. Kirby accept the amendment, substituting for his amendment the rule as it stands with the phrase added, "or by parties who care for the cars?"

MR. KIRBY—Yes, sir.

MR. CLOUD—I will then move as a substitute the addition to the rule as it stands of the words, "or by parties who care for the cars."

MR. KIRBY—I call for a vote on my substitute for Rule 11.

THE CHAIRMAN—There is another motion before the house, an amendment to Mr. Kirby's motion, that the rule remain as at present. I will put the amendment first—that the rule remain as at present.

The amendment was carried.

MR. BRADY—Do I understand that that covers leased cars or cars that are controlled or owned by other parties, and not controlled by the railroads; for instance, cars of the United States Rolling Stock Company, running on the Fitchburg Railroad, and on the Vermont & Massachusetts? Does that cover cars owned by different companies—cars, for instance, owned by Mr. Hurd, that run on the C. C. C. & I., and on the Housatonic? I would like to have that information, because it would be very important to my officials, when I return. The M. D. T. cars are cared for by the New York Central. They are part of their equipment. If you say you will charge them, you might as well say that you charge the New York Central. The M. D. T. Company has been recognized for years

in this convention, and they are part and parcel of the New Y
tral, only they have a general office where they do business qui
is nothing more than the Union Line on the Pennsylvania.

MR. MARDEN—I do not suppose it makes any difference
for the work that is to be paid for, if we know whom to char
There are private cars running that belong to Mr. Hurd, f
no one knows where to send a bill. There are a great many pa
do not know whether they should send to the New York Cent
pany bills for repairs to these Merchant's Despatch cars. If t
bore the initial of the New York Central Railroad Company, w
should do if the repairs are to be charged to the New York
then people who make repairs on them would know where to s
bills.

MR. WALL—It seems to me that the New York Central
notice here that they own the Merchants' Despatch, and that
for the Merchants' Despatch should go to the New York Centra

MR. BLACKALL—It seems a rather strange proceeding to
original motion is made; an amendment is made to that motio
immediately gets up and proposes the original motion again; a
ment is made to that, and the original motion comes up a third

MR. CLOUD—I would move a reconsideration of Rule 11.
it is not right that we should make bills that the New York Ce
to pay, ultimately, for repairs to a large number of cars which
fair usage or from faulty construction, or make bills for other w
we would for cars that have their lettering on.

MR. ADAMS—Did you vote in the affirmative?

MR. CLOUD—I did not vote at all.

THE CHAIRMAN—We, as a convention, do not control th
have anything to say as to who owns them. The New Yor
come here and say they own the Merchants' Despatch Trans
Company's cars. We make our bills against them. If we pu
under those cars we charge them to the New York Central direc
never have been refused those bills.

MR. BRADY—In 1884 this same rule was adopted. In 18
omitted at Old Point Comfort. The object now is simply t
rule back—to let everyone understand that the Merchants'
Transportation cars are cared for.

I call for a vote according to cars.

MR. HATCH—I move you, sir, that we suspend this rule
or lay it upon the table.

MR. BLACKALL—A member of the convention has a rig
mand a vote by cars. If it is called for, I think he is entitled t

THE CHAIRMAN—The question before the house is Mr
motion, and a vote by cars is called for on this motion. Th
alternative, therefore, but to have a vote by cars. The questio
the house is Mr. Kirby's motion that that be substituted for Nu

Then there is another motion before the house that Rule 11 remain as it stands. Now we want a vote by cars on that rule.

MR. FORSYTH—I should like to ask what there is in the constitution or by-laws which give the privilege of voting by cars on such a question. The by-laws read: "The votes of a majority of the members present shall be required to decide any question, motion or resolution which shall come before the Association, unless otherwise provided for." If that is "otherwise provided for," I should like to know where it is.

MR. VERBRYCK—It is otherwise provided for in the heading of the rules. I think that this heading of the rules which was adopted by the Master Car-Builders' Association, and which we have always worked under, settled that point. The heading is:

"*Resolved*, That in voting upon the adoption of rules to govern the condition of, and repairs to freight-cars offered for interchange traffic, including payment for cars in case of their destruction, the vote of each railroad is to be governed by the number of eight-wheel freight-cars the road owns, and two four-wheel cars represent one car, and that each 1,000 cars, or the major part thereof, is entitled to one vote, and it shall require two-thirds of all the votes present to approve."

MR. SNOW—I move that we proceed to Rule 12.

MR. LENTZ—As I understand, the resolution at the head of our rules covers this ground fully, and gives the convention authority to pass upon the rules by a vote by cars. It requires that every resolution shall be voted upon by cars, and we have been acting in the manner we have, taking up each section and allowing it to pass, simply as a matter of convenience.

THE CHAIRMAN—If the New York Central demands a vote by cars, I will ask the Secretary to call the roll. The vote is on Mr. Kirby's substitute.

MR. CHAMBERLAIN—I should understand that the vote by cars would be on Rule 11. I made an amendment, and that amendment was carried, which adopted Rule 11. Now there are parties who are not satisfied with that vote, and they want a vote by cars. I should think a vote by cars would have to be on Rule 11.

THE CHAIRMAN—What is before the house is Mr. Kirby's substitute for Rule 11. Now, then, there is an amendment to that to allow the vote to stand as it is. We had a vote on that, and the amendment to allow the rule to remain as it stands was carried. Now, then, the other party demand a vote by cars, which they have a right to do. This question whether the rule shall remain as it stands, is what we are going to vote on.

MR. CLOUD—It depends on what the party calling for a vote by cars calls for.

MR. BRADY—I call for a vote by cars on Mr. Kirby's amendment to the rule.

MR. ADAMS—It seems to me that would put it in a very confusing

condition. You propose a vote by cars on Mr. Kirby's substitute, after voting that Rule 11 shall stand as it is. If it is carried, you will have two Rules 11.

Mr. KEELER—No amendment to the rule has been made, only to the one offered by Mr. Kirby.

MR. KIRBY—As I understand it, what we are going to vote on now is my substitute for Rule 11.

A vote by cars was then taken on Mr. Kirby's substitute. It was carried by a vote of 327 to 129.

MR. TRAINHAM—In the case of the Merchants' Despatch, as I understand it, if we make any repairs to their cars, we are to make out the bills to the New York Central Road.

The convention then adjourned till the following day.

THIRD DAY'S PROCEEDINGS.

The convention was called to order at 10 A. M.

THE PRESIDENT — The further consideration of the Rules of Interchange is now in order.

Mr. McWood took the chair, and proceeded with the reading of the rules as follows:

"BILLS FOR WHEELS AND AXLE WORK.

RULE 12.—Bills rendered for wheels and axles shall be in accordance with the following schedule of prices for material, with the proper debits and credits:

	NEW.	SECOND-HAND.	SCRAP.
One 36-inch wheel.....	$15 00	$10 00	$6 00
One 33-inch wheel.....	11 00	8 00	5 00
One 30-inch wheel (or less)...	10 00	7 00	4 00
One axle.....	11 00	7 00	4 00

And with an additional charge of $1.50 for all labor, for each pair of wheels and axle renewed. If new wheels and axles are substituted for second-hand wheels and axles, proper charges and credits shall be allowed, although such substitution be made on account of only one loose or defective wheel, or a defective axle."

MR. SCHLACKS—I think the price of 36-inch wheels is too high. They can be made at a profit at $13 apiece. I think if we charge $13 that that will cover all the profit necessary. I make a motion to that effect, to charge 36-inch wheels at $13 apiece. I would make the second-hand wheels $9, and the scrap, say $5.

Seconded by Mr. Snow.

MR. RHODES—Might it not be well to hear from the committee appointed to make the revision ? Their recommendation was that one new 36-inch wheel should be $13.75 ; one second-hand wheel, $9.75, and the scrap-wheel $5. They made that recommendation to the Executive Committee, but the Executive Committee apparently did not accept it. They made the 36-inch wheel $15, the second-hand wheel $10, and scrap wheel $6. Possibly the Executive Committee have some good reason for that. I would like to hear something from them before we act on any amendment.

MR. CLOUD—On behalf of the Executive Committee and their consideration of the report of the sub-committee, I will say that the Executive Committee's opinion was that the old form of putting the price of material separate, without the labor included, was better, and they therefore agreed that it was better to retain the old form, but they said : We will not act as the Executive Committee, in putting the prices down on this proof-sheet, because the Association will fix the prices in convention. The main point is, we like this style of putting the matter, and we leave the prices to be fixed by the Association. If the Association consider the form right, let them go ahead and amend these prices.

MR. RHODES—Is there a motion before the House ?

THE CHAIRMAN—There is a motion to alter the price of the 36-inch wheel.

MR. RHODES—I move, as an amendment to that, that the Association approve the form of charging wheels as recommended by the Executive Committee.

THE CHAIRMAN—Then perhaps Mr. Schlacks will withdraw his motion and let it come on afterwards.

MR. SCHLACKS—I am satisfied with the form.

THE CHAIRMAN—Then we will put Mr. Rhodes' motion.

Mr. Rhodes' motion was carried.

Mr. Schlacks' motion to make the price of one new 36-inch wheel $13, second-hand, $9, and scrap, $5, was carried.

MR. SNOW—I move to make the 33-inch wheel $10, second-hand, $7, and scrap, $5.

Agreed to.

MR. SOULE—I was going to offer an amendment, Mr. Chairman, but you did not recognize me.

THE CHAIRMAN—The motion is carried. We will give you a chance on the next wheel.

MR. SOULE—I voted in the affirmative and I believe I have a right

to move to reconsider. I should like to move a reconsider the prices of the 33-inch wheel.

The motion to reconsider was carried.

MR. SOULE—I move that the prices for a 33-inch wheel sh new, $10; second-hand, $7; scrap, $4.50.

Agreed to.

MR. MACKENZIE—I move that the prices of a 30-inch whee $5 and $4.

MR. CLOUD—I move, as an amendment to that, that they b and $4.

THE CHAIRMAN—It is moved by Mr. Cloud in amendm the price be $9 new, $6 second-hand, and $4 scrap.

MR. MACKENZIE—With the consent of the seconder, I w my motion.

Mr. Cloud's amendment was carried.

MR. SNOW—Two or three kinds of axles are in use. We h axle that weighs 330, another one that weighs 385. It would ma a difference there. I move that the price of a new axle be $8, hand $6, scrap as it is, $4.

MR. CLOUD—I move that the prices be made to read, c new, $10, second-hand $7, scrap $4.

Seconded.

MR. ADAMS—Everybody understands at present, that the te is to increase the size of axles. We are talking here about 4-inc nals. They must necessarily be heavier than 2¾ inch journals. there are a great many old axles that do not weigh more than 34 pounds. There are others that weigh up to 400 pounds. Nov not believe anybody can get a good axle of first-class iron f I mean those large, heavy axles that are coming into use ver rally. I was going to make a motion, but I do not know that but I would make it $12 rather than make it less.

THE CHAIRMAN—Then you would have to make two class

Mr. Cloud's motion was carried.

MR. GRIEVES—We have a great many cars on our ros 31-inch wheels. Now a price is made here for a 33-inch whee price is made for a 30-inch wheel; and we have been havin trouble in regard to our bills, as our people claim that we should ceive the same price for a 31-inch wheel as for a 30-inch wheel.

MR. VERBRYCK—There are very few roads in the coun have as many different kinds of wheels as the Baltimore & Ohio, think that road ought to change and have the standard wheel.

MR. GRIEVES—We are doing that as fast as we can.

THE CHAIRMAN—The only comfort I could offer you woul charge you more for a 31 than a 33-inch wheel.

MR. KIRBY—Can Mr. Grieves name a manufacturer at the day who is making wheels 31 inches in diameter?

MR. GRIEVES—We make our own wheels. We have two fo where we manufacture our own wheels.

MR. CLOUD—I observe a misprint here—the word "renewed." It was written "removed," the idea being that no matter what work was done in the way of repairs, $1.50 should be a regular charge for each pair of wheels and axles which had to be removed from a truck, whether one or two. There are five cases, as I understand it, that might come up ; one is the replacement of one wheel, the second is the replacement of one axle, the third is the replacement of one wheel and one axle, the fourth is of two wheels, and the fifth is of two wheels and an axle. Therefore, in order to cover all these cases with a uniform charge for labor which we thought would be equalized in the course of time, we proposed a fixed charge for each time a pair of wheels and an axle had to be removed from a truck, and I would move that this be altered to read, "and with an additional charge of $1.50 for all labor for each pair of wheels and axles removed from a truck."

The motion was carried.

MR. CLOUD—I think we ought to adopt the rest of this unless it is considered already done. There is some new material here which it is very important should be clearly understood by the members, that is: "If new wheels and axles are substituted for second-hand wheels and axles, proper charges and credits shall be allowed, although such substitution be made on account of only one loose or defective wheel or defective axle."

This is intended to cover such a case as this. If one wheel is defective at some point where the company that does the repairing has no facilities for putting another wheel on, they may be allowed to put a new pair of wheels and axles under the car, charging the prices for new material and crediting for the second-hand and scrap. It is the way we have always allowed bills under the old rules, and have presented them so, and in one or two cases they have been objected to, although we understand the rules in the past to have been intended to cover this case.

THE CHAIRMAN—That is my interpretation of the rule, and we so act.

MR. RHODES—What Mr. Cloud calls attention to, we have had the same trouble with on our road—a misunderstanding of what credits and charges are to be allowed. It seems to me that the misunderstanding occurs owing to a wording later on in the rules. In Rule 21 it is specified that in case of destroying a car no betterments shall be allowed. Now that expression gets transposed, and whenever a company does work for another company they will figure that no betterments shall be allowed. For instance, if you repair work on a defect card, if you happen to make any betterments to that car on account of the work that is specified on the card, the betterments are not allowed. The same thing comes up in this wheel business. If you happen to make some betterments to a car on account of wheels, some of the members of the Association consider that those betterments ought not to be allowed. I will cite two roads to illustrate what I mean. If the Fort Wayne road

have a worn-out wheel under a Chicago, Burlington & Quincy c
replace that with two new wheels and a new axle, they will ch
with the betterments they have made to the car and we will pa
The reason they do that is that the wheels will probably be worn
road as well as on the other road; that if they did not make those
to-day we would have to make them on our own line, and we wo
the benefit of the betterments. The Fort Wayne road, say, have
wheels on that Chicago, Burlington & Quincy car. At some
point on their road they replace them. We put new wheels and
axle on. There is no charge in that case to be made against the C
Burlington & Quincy. For their convenience, they put on new
and a new axle. There is no charge to be made against the C
Burlington & Quincy. Now, at Chicago we will assume, they ha
got the conveniences for making this change. We have. They
a defect card for these two slid wheels. We repair them, atta
defect card to our bill. We have not happened to have a secon
wheel or axle, and we put betterments on that car. Now the q
comes up, is the Fort Wayne to pay for those betterments or the C
Burlington & Quincy? I claim that the Fort Wayne has to. I
practice of a large number of the roads is that the betterments ar
for the Chicago, Burlington & Quincy's benefit, and that no ch
to be made to the Fort Wayne road. The new axle that we put
there we do not charge them for. Suppose it is another case. S
that instead of being a Chicago, Burlington & Quincy it is an At
Topeka & Santa Fé car. We put these betterments on the car on a
of the Fort Wayne. The Fort Wayne object to it. They say, "
not get any benefit from it; collect your bill from the Atchison
All we collect from them is the charges we made on this defect c
think that this ought to be clearly understood. In order that it
understood clearly, I would make a motion that in place of "
wheels are substituted for second-hand wheels and axles proper
we substitute the following:

"All betterments incurred in changing defective wheels or ax
be charged to the owner of the car except in cases of defect cards
betterments in such cases will be charged to the company attach
card."

MR. VERBRYCK—I am glad Mr. Rhodes brought that mat
for I had just such a case a few days ago, as he mentions, and rath
have any trouble about it I paid the bill.

MR. KIRBY—May I ask if they cannot charge any betterment
than are mentioned on the card? The card must specify that th
must be done and charged to the parties putting the card on, as I
stand it.

THE CHAIRMAN—That is as I understand it.

MR. RHODES—I do not know that Mr. Kirby quite under
We are allowed to charge betterments other than are specified
card. The card is a defect card, and the defect is one wheel with c

rim, which they ask us to replace. They give us a defect card for that. Now, in replacing it, we cannot replace it without making a betterment to the car. In other words, we haven't a second-hand axle to put on, so we put on a new axle and a new pair of wheels. Now, on account of the chipped wheel, we would charge the road that gives us the defect card with a new wheel to replace the chipped one, with the new axle less the scrap value of the second-hand axle, and with another new wheel, less the scrap value of the second-hand wheel. We are only allowed to add that charge of betterments in the case of wheels and axles.

THE CHAIRMAN—It does not take in the question then of $1.50 for labor.

THE SECRETARY—We understand, Mr. Rhodes, that it is a substitute for the last sentence ?

MR. RHODES—Yes, sir.

The Secretary read the rule as proposed to be amended, omitting the table.

MR. CLOUD—I would suggest, in the first place, that we use the words "specified on" in place of "of," before "defect cards."

MR. GRIEVES—I would ask if this amendment strikes out this part: "If new wheels and axles are substituted for second-hand wheels and axles, proper charges and credits shall be allowed."

MR. RHODES—To state that "all betterments incurred in changing defective wheels or axles will be charged," etc., is the same thing as if we say, "if new wheels and axles are substituted for second-hand wheels and axles, proper charges and credits shall be allowed." Allowing proper charges and credits—that is allowing for betterments. The first sentence of the rule says proper credits and debits shall be allowed. I do not intend to waive that at all. What I mean by this is that it is just to cover a case of this kind—we slide a pair of wheels of the Fort Wayne on our line. We haven't any right to make a charge there at all. Now in making a charge we are obliged to put new wheels and new axles on it. In other words, we are obliged to better that Fort Wayne car. We might make a charge for that, when we get to a connecting point, and give a defect card for that work. Because we do not have facilities to do the work, and they do have, they make the repairs; but they put a new axle under in place of the second-hand axle. They put in new wheels in place of the ruined wheels, and they put in also a new axle. Now, heretofore they have not been charging for that. They only charge us for the two slid wheels, saying that is all we have given them. I say we have given them more. We have spoiled those wheels and we have necessitated them to put in a new axle, and we ought to pay for them.

MR. CLOUD—I don't see why it should be so. It seems to me that a new axle is put under the owner's car. The car is bettered to that extent, and it is according to the intent of these rules that the owner should pay for the betterment.

MR. RHODES—I would like to answer Mr. Cloud on that question.

If that ruling is the correct one, then when the Chicago, Burlin Quincy Company slide a pair of Fort Wayne wheels at Quincy, t dle of our line, and are obliged to put a new axle under that car, the privilege of getting the Fort Wayne to pay part of the expen of our own carelessness in sliding those wheels. If we have the do it at the interchange point, we certainly have the right to do where else; because the defect card gets the car away from u further than that, suppose in the place of its being a Fort Wayn happens to be a Boston & Albany car. We have not the arrange Chicago to put these new wheels in the Fort Wayne have. them a defect card. Where are they going to collect the bett except from the Chicago, Burlington & Quincy? They can around and say: "The Chicago, Burlington & Quincy slid a wh we can charge is for the two new wheels; we have bettered your making the change; you must pay for the betterment."

I think if the gentlemen will figure it over they will see nothing in conflict at all with fairness and equity in that resoluti

MR. BLACKALL—It seems to me that that will conf accounts very much. The defect card covers the point very fully

MR. MILLER—I am like Mr. Cloud. I do not quite Rhodes' point. If they put on a defect card in Chicago to h wheels replaced instead of doing it themselves, and they choose in a new axle, I do not see where any charge would come aga Chicago, Burlington & Quincy road for the new axle applied on Wayne road. But, on the other hand, if he should be obliged to that axle at Quincy and put in a new axle in place of the old account of not having a second-hand axle equally good, I think i be proper then for him to make a charge against the Fort Way for that betterment. If the Fort Wayne road changes the axle do not see where the Chicago, Burlington & Quincy has any coming against it. In one case the Fort Wayne road have ma own betterments, and there would not be any charge for it.

MR. ADAMS—To a certain extent I agree with Mr. Rhode position, but I cannot see why we should allow betterments on and not allow betterments in other places. I do not see any p in making an exception of wheels in that respect. Now, this is case of numerous cases where betterments are made, and if you in one case why not allow it in other cases? I cannot see the p of making this a special exception.

MR. RHODES—If you will allow me, I can explain that. allow for betterments with wheels right along, and it is the o in the rules of interchange where we do allow betterments.

MR. ADAMS—I know it is; but I cannot see why, if we all in this case, we should not allow them in other cases whe evident betterments are made.

MR. CARLTON—Suppose a Baltimore & Ohio car, for i goes on the Chicago, Burlington & Quincy road, and it has a r

of wheels and axle, I do not see what right they have to put in a new pair of wheels and axle and charge us the betterment for the axle.

MR. RHODES—That is just what I claim. We have no right to do so, and my resolution is to prevent us from doing so.

MR. MACKENZIE—I think that raises a very difficult question there. Who is to determine when those axles are old—when they are second-hand? After they are once used they are second-hand, I think, and the rules should work in equity all the way through.

The Secretary read the amendment to the rule again, at the request of a member.

A MEMBER—I move to lay it on the table.

Seconded.

The Chairman put the question on the amendment proposed by Mr. Rhodes. The amendment was lost.

The motion to adopt Rule 12 with the addition of the words "removed from the truck," was then put and carried.

MR. VERBRYCK—The amendment of the Constitution as proposed was made the special order for 10.30 to-day, and unless some person will move to postpone that until we get through the rules, we must call it up. I think we might postpone it until we get through with the Rules of Interchange.

MR. CLOUD—I move we postpone consideration of the amendment to the Constitution until we finish with the Rules of Interchange.

Agreed to.

The Chairman read Rule 13, as follows:

"RULE 13.—Bills for wheel and axle work shall be in the following form: (See page 134.)

.....

To.....*R. R. Co. Dr.*

For Wheels and Axles used under.....**Cars. Month of**.....**188** .....

Date and Place.	Initial Kind & Number of Cars.	Wheels or Axles Removed.				Shop Marks on Wheels or Axles.	Materials Used.				Net Charge.	Labor Charge.	Total Net Charge.
		Maker.	Date Cast.	Number	Cause of Removal.		Wheels.		Axles.				
							N'w	2d h'd	N'w	2d h'd			

" Bills for wheel and axle work must make specific mention of each wheel and axle removed or applied.

" Bills which do not embody all the information called for by the headings of the columns, may be declined until made to conform to the requirements of the rule. If no marks are found on wheels, or axles removed, a notation to that effect must be made on face of bill."

MR. McKENZIE—I move that the form be laid on the table.

MR. CLOUD—I move that it be adopted as it stands.

Seconded.

THE CHAIRMAN—It is moved that the form be laid on the table and as an amendment that it be adopted as it stands. I will put the amendment first.

MR. CLOUD—Was the first motion seconded? I did not understand that it was seconded, or I should not have made my motion.

MR. McKENZIE—I withdraw my motion, Mr. President.

THE CHAIRMAN—Then the motion before the house is that Rule 13 be adopted.

MR. CLOUD—My motion was intended to cover the bill form only—not the section coming after, about bills for wheel and axle work.

The motion was carried.

MR. McKENZIE—I do not see how we are going to get the information into that bill as printed here. That is what I was objecting to. There is no space for the name of the maker of the wheel removed or applied, or the marks on it. We are removing wheels from our cars today, and we have no way of knowing where they come from or who put them under. Now it is very difficult for us to keep a wheel record, and we certainly ought to have the names of the makers of the wheels which are put under a car just as much as of those removed.

MR. ADAMS—Would it be proper and in order for a member to make a motion that a column be added to that form for the name of the maker, where wheels are put under a car? It seems to me that it must have been omitted through an oversight. I should prefer to have it in. There is no place for the name of the maker of the wheels put in—only for the name of the maker of the wheels removed.

MR. LENTZ—I move a reconsideration of the vote on this form of bill.

Seconded.

MR. SOULE—The sub-committee, in answer to their circular, received a number of suggestions to the effect that provision should be made in the bill form, and the requirement should be exacted that full information should be furnished about the makes of the wheels applied. The form, as drawn up by the sub-committee, provided for that. There seems to be an inclination here to restore that feature. That can be done very simply, I think, by adding one word to the bill form. To the broad, general heading " Wheels or Axles Removed," add the words,

"and applied." Then the subsidiary columns underneath will have to be filled with both classes of wheels.

I voted in the affirmative on Mr. Cloud's motion to adopt that bill-head, and I now move a reconsideration.

The motion to reconsider was carried.

MR. SOULE—I now move the amendment of the form submitted in the report by adding to the words "wheels or axles removed" the words "and applied."

MR. ADAMS—Wouldn't you add, Mr. Soule, a column there for the name of the maker of the wheel applied ?

MR. SOULE—Mr. Adams will notice under the broad, general heading that there is a sub-column headed "Maker." Now, if we make the broad, general heading, "Wheels and Axles Removed and *Applied*," and take that in connection with the clause on top of the following page, which says that bills may be refused until all the information called for by the form shall be given, then we shall be fully protected.

THE CHAIRMAN—Don't you think it would be more easily understood if you added "maker" on the other column—under the column of "material used," put in "maker"; I think that would make it more easily understood.

MR. SOULE—In addition to the maker's name, it is very essential to have the number of the wheel. Nearly all wheels now are cast with numbers on them, and if we make the addition I suggest we shall then get not only the maker's name, but the date cast and the number. Of course you cannot fill in the cause of removal of the wheel applied. But you will get the maker, the date cast, and the number.

MR. CLOUD—I would support this amendment. I think it is important. I overlooked that; and another line would be taken for the wheel applied. But I suggest that Mr. Soule change the heading "Cause of Removal" to "Condition of Wheels"; with that addition, I would second the motion.

MR. SOULE—I will accept that amendment, and would suggest that the revised reading be "Wheels and Axles Removed and Applied," and instead of "Cause of Removal," "Condition of Wheels."

MR. WALL—Before taking a vote on that subject I request that we wait a moment until we can show on the board what the effect of these changes will be.

THE SECRETARY—If there is no objection, I will present the Auditing Committee's report while we are waiting, as follows :

NIAGARA FALLS, June 9, 1886.

The committee appointed to audit the accounts of the Secretary and Treasurer of the Master Car-Builders' Association for the past year, have performed the duties assigned to them and find the accounts correct in all respects.

LEANDER GAREY,
H. D. TITUS,
G. W. DEMAREST,
} *Committee.*

The Secretary then read the report of the Treasurer, which is as follows:

JOHN KIRBY, *Treasurer, in account with the Master Car-Builders' Association.*

1885.		DR.	CR.
June 9.—To balance, as per last account.		$1,013 81	
1886.			
June 9.—To amounts collected by M. N. Forney, Secretary, during year		3,238 41	
	CREDITS.		
"	By sundry amounts paid out by M. N. Forney, Secretary, as follows: Printing History and Annual Reports.		$347 17
"	" Annual Report, Stenographer's Report and Printing		792 87
"	" Engraving		72 16
"	" Circulars—printing		125 05
"	" Stationery		12 30
"	" Postage		94 00
"	" Office rent		200 00
"	" Sundry expenses		3 16
"	" M. N. Forney's salary from June, 1885, to June, 1886		2,500 00
"	" Exchange on drafts		
"	" Balance		104 61
		$4,252 22	$4,252 22

JOHN KIRBY, *Treasurer.*

NIAGARA FALLS, June 10, 1886.

On motion, both reports were accepted.

MR. WALL—I move as an amendment to the other amendments that the form shown on the blackboard be the form for a bill-head. The form on the blackboard does not include the first two columns shown in

the printed copy ; but it is intended, of course, that they should be there. The blackboard is not quite large enough to include them. The principal difference that you will notice there is the omission of the four columns on new and second-hand wheels under the heading "Wheels and Axles" in the printed form. The reason of that is, that under the column of "Condition" it would be shown whether they were new or second-hand. The first would be the maker, and then the date cast and the number, and in the "Condition" column would be entered whether it was new or second-hand. It would make the whole bill-head very much smaller and very much neater, and it could be used for wheels or axles removed or applied with equal facility. I therefore move as an amendment that this be substituted for the form shown in the pamphlet, with the understanding that the two columns are to precede it.

MR. BRADY—I do not understand where you are going to put in the name of the wheel fitted, unless you take an extra line. If the words, "Name of Maker, Wheel Applied," are put in here, in the same column, it will be very plain, and the whole charge can be got on one line. Now my experience in making fifty or sixty thousand dollars of wheel bills every month, twenty-three sheets long, leads me to think that it would cause a great deal of trouble to introduce, on the line under, the name. This only states the name of the wheel removed. If you attempt to put in two names, you cannot tell which one is the one removed and which one is the one fitted, unless you put in here, "fitted." You would have to take this extra line, anyhow. Our bills are made a little long, and they give the name of the maker of the wheel we fit. We say, "2 new Buffalo," or "2 new Griffin," or "2 new Thatcher," or "2 new Rochester." If a place is made here for that, it will save a great deal of confusion and a great deal of extra work where you make out a great number of bills. It does not at all change the form, only it gives the name of the maker too.

MR. McKENZIE—If I am in order, I would make an amendment.

THE CHAIRMAN—Mr. Soule's motion is before the house.

MR. SOULE—I am ready to waive putting that motion, because these amendments cover additional ground and do not conflict with it.

THE CHAIRMAN—Is Mr. Wall's motion seconded ?

MR. CLOUD—I would second that motion. The idea is that you take another line in order to conform with the rule which says that "Bills for wheel and axle work must make specific mention of each wheel and axle removed or applied;" and it seems to me that the form proposed on the board after the first two columns is quite sufficient to cover the ground, whereas the additional columns Mr. Brady suggests might be construed as not making specific mention of each wheel and axle applied.

MR. McKENZIE—I would take this form, and take the first column, and then the second, third, fourth, fifth and sixth. Then I would start at the third again, and head that "Wheels and Axles Applied"; make the same form for the wheels and axles applied as we have for the

wheels and axles removed. It will make the form longer, to be sure; but we will get all the information in there, and it will be in keeping with the paragraph on the next page.

MR. SOULE—I would like permission to make a sketch; I would like to try to sustain the position of the sub-committee in recommending the form which was printed in the *Railroad Gazette*, which I have here, and which seems to be overruled by the Executive Committee; but I think some of the points were not appreciated.

Mr. Soule proceeded to sketch on the blackboard the form of bill proposed by the sub-committee.

MR. ADAMS—This matter of making bills has been a source of a good deal of dispute, and we should make them as simple as possible, although it may take more paper. But it seems to me that rule would make some confusion and misunderstanding. We should make it as plain as can be. Now, all of our bookkeepers have not got so much information, perhaps, as they have in some other places, and we should make it simple and plain, so that it may not be misunderstood at all.

THE SECRETARY—While Mr. Soule is making his drawing I would suggest that the Committee on Subjects would be obliged to members if they would present any subjects they wish brought up for discussion before the close of this meeting to the Chairman of the Committee, Mr. Blackall.

I have a communication here from Mr. H. K. Lindsey, manager of some brake company. What will you do with it?

MR. CLOUD—I move that it be referred to the Committee on Brakes.

Agreed to.

MR. SOULE—I would like to explain why the sub-committee recommended the form of bill which I have shown here. From this line down (referring to sketch) represents our proposed form. These headings which are shown here provide for detailed information as to axles removed and applied; this column for shop-marks, etc. Then we suggest that column for new, second-hand and scrap; a column headed "Credits," and a column headed "Charges." We foresaw the difficulty brought up by Mr. Brady, which faded away in consideration of other advantages; namely, that while this required the use of an additional quantity of paper, it would give us additional information. I do not think it would involve any additional clerical work. I have made a couple of brackets here covering supposed interest. When you reach this column headed "New, Second-hand and Scrap," you make a single entry. You take the prices given in the tables, so that it does not need any elementary additions or subtractions. You treat each piece of material individually in its credit or its charge, and you carry out here, for your scrap-wheel $4, for your second-hand wheel $8, and for your second-hand axle $8. Then you go on with your entries relating to the wheels applied and make similar notes in the column until you reach this point. Then you skip *that* column and put your entries in this

column. You translate directly from the table and make your entries there. The only thing that was not provided for and which I would concur in would be an additional column showing the net charge on each car. With us that is no object, because we do not keep any individual account for cars ; but possibly on some road having a number of subdivisions, they may have to pick out the total of items of those several cars and charge them to different divisions. But the advantage of this is that while it takes more paper, it provides for full information on every point, and it occasions no elementary additions or subtractions of the entries. In these columns headed "Credit" and "Charge" would be found another corresponding place in the schedule of prices adopted.

MR. BRADY—I hold in my hand the form which we adopted last year ; but I do not think that many roads adopted that form. I wrote to one gentleman, Mr. Kirby, asking him to adopt it, and he replied that if he should adopt that form he would be obliged to hire an extra room for storage. In this case he would have to hire two extra rooms. I think the form we had last year is very close to it, with the exception of the words "number, name and maker of wheels applied." I do not think the convention is in a position to dictate to the different railroads what form they shall use, because the different railroads do not seem to take it up. We got our form out a year ago, and I believe the Fitchburg, and the Detroit, Lansing & Northern are the only railroads that come through our office that had this form of last year. The other roads claim that it is too large. Now, if you take the form Mr. Soule proposes, it will be twice as large. We want a bill that gives plainly all the information required—giving the wheel that is applied, the wheel that is removed, the cause of removal, the name of the maker and the number of wheels applied. This form of last year tells whether the wheel is second-hand or scrap—gives all the information necessary.

MR. MARDEN—I think that this wheel bill question should be thoroughly ventilated, and that we should thoroughly understand it. I believe in having it as simple as possible, and so arranged as to give us all the information we need. As far as the form of the bill is concerned, it is immaterial to me ; but I do hope that whatever form is adopted this year that it will not be changed next year. A stereotyped inquiry I receive from our auditor when I get home is what change has been made in the bill this year ? On the approval of the wheel bill last year we immediately changed our own bill-heads. In my opinion it does not do our clerical force any good to make these changes every year. We should settle down upon some one thing that is perfectly satisfactory, even if it takes a long time to do it, and not change it every year.

MR. SOULE—I think I can answer some of Mr. Brady's last objections. He refers to the size of the bill. When the last year's rules were published I was connected with the West Shore road. I was anxious that our system should conform to the requirements of the rules, and we immediately prepared a form based on that which had been adopted and sent it down to the auditing department. They returned it with

emphatic objections because of its shape. They did not refer to the size of it, but the shape of it; because the horizontal dimension of that form was greater than the width of any of their books or any of their files. There were also objections in the car shops and motive power office for the same reason; because those bills if copied in an ordinary sized book have got to be copied lengthwise and read lengthwise. In the discussion which was brought out, there was no objection to the length of the bill. They would be willing it should be a yard long and make a dozen sheets so long as it would come into their existing system. In looking into the Erie office, I find the same state of things. This form of bill can be got into the width of any ordinary bill-head, and the only extra dimension will be in the direction of its length, up and down, which only requires additional pages in the copying book.

MR. McKENZIE—I have asked Mr. Wagner to draw on the blackboard a form of bill which I wish to bring to the notice of the convention.

MR. WALL—While this form proposed by Mr. McKenzie is being put on the blackboard, can we not proceed to the consideration of some of the other rules?

THE CHAIRMAN—If it is the pleasure of the convention. If there is no objection I will go on with Rule 14.

"RULE 14.—In noting on bills the cause of removal of wheels and axles, the following terms shall be used:

"*Worn Flat*—Flat spots exceeding 2½ inches in length or diameter. Care must be taken to distinguish this defect from 'slid flat.'

"*Worn Flange*—Flanges less than one inch thick, or having flat vertical surfaces extending more than seven-eighths inches from tread.

"*Cracked Plate*—Cracks in plate when not extending through hub to axle. Length of crack must be stated.

"*Cracked Hub*—Cracks extending from axle outwardly through hub. Length of crack must be stated.

"*Cracked Brackets*—Bills should state the number of brackets cracked.

"*Broken in Pieces*—

"*Shelled out*—Wheels with treads defective on account of circular pieces shelling out, leaving round flat spots, deepest at the edge, with a raised centre. Wheels must not be condemned from this cause, unless the spots are over two and one-half inches

in length or diameter, or are so numerous as to endanger the safety of the wheel.

"*Loose Wheel*—

"*Out of Gauge*—Bills should state the variation from limits prescribed in Rule 3.

"*Small Journal*—Journal smaller than prescribed by Rule 3. Diameter of journal must be stated."

On motion of Mr. Adams, the rule was adopted as read.

THE CHAIRMAN—We now come to the heading "Repairing and Settling for Foreign Cars."

"RULE 15.—Foreign cars if damaged shall be promptly repaired by the company causing the damage; such repairs shall be thoroughly made, and the work shall conform in detail to the original construction (provided it can be determined from the car itself) and with the same quality of material originally used; new standard parts may, however, be used if agreed to."

The rule, on motion of Mr. Adams, was adopted as read.

THE CHAIRMAN (Reading):

"Rule 16. Wheels on same axle must be of the same circumference.

"New wheels must not be mated to second-hand wheels."

MR. CLOUD—That was changed to "with" by the Executive Committee.

THE CHAIRMAN—(Continuing):

"Prick-punching or shimming the wheel fit must not be allowed.

"Wheels applied must be marked on inside with date of application.

"The wheel-seats of foreign axles must not be reduced to fit wheels, but the wheels must be bored to fit axles."

MR. SNOW—I move to strike out that last clause, "Wheel seats of foreign axles," etc.

Seconded.

MR. CLOUD—I hope this motion will not prevail. It certainly should be considered better practice to do as here prescribed than otherwise, and if this motion is carried it will allow parties to cut away the most valuable part of our axles.

MR. MARDEN—I hope that this motion will not be carried, because, as Mr. Cloud says, it is a practice that cuts away our standard and the

most valuable part of our axles. I have objected to it for the past two or three years.

THE CHAIRMAN—I can only say that this is a very important matter and one that I have had occasion to find very serious fault with. We have had axles the wheel seats of which were turned to the Master Car-Builders' standard that were reduced to 4¼ inches. We consider that that is simply destroying the axle. I think it is wrong. It is certainly not a mechanical operation. It is wrong in principle.

MR. SNOW—I see there is considerable objection to my motion, and I will withdraw it.

MR. LENTZ—I move that Rule 16 stand as read.

The rule as read was adopted, "with" being substituted for "to" after the word "mated."

THE CHAIRMAN—We will now go back to Rule 13. The matter before the house is Mr. Wall's motion, I think.

MR. LENTZ—This (referring to sketch) is Mr. McKenzie's amendment.

MR. McKENZIE—I made an amendment to Mr. Wall's substitute.

MR. WALL—I accept Mr. McKenzie's amendment as a substitute for mine.

THE CHAIRMAN—What am I to understand ; is the motion before the house ?

MR. WALL—Mr. McKenzie's motion.

THE CHAIRMAN—It is moved and seconded that the form shown on the blackboard be substituted for the printed form.

The motion was carried.

The following is the form adopted :

.....*Company,*

Address, ...

To .....*Railroad Company, Dr.*

For Wheels and Axles put under .....*Cars, Month of* 188

Date and Place.	Initial, Kind, and Number of Car.	Wheels and Axles Removed.					Wheels or Axles Applied.						
		Maker.	Date Cast.	Number.	Cause of Removal.	Shop Marks on Wheels and Axles.	Maker.	Date Cast.	Number.	New or Second Hand.	Material. Net Charge.	Labor Charge.	Total Net Charge.

Received payment, $.....

Date, ...188

.....

MR. CLOUD—I think a word has been left out in writing it. The three last columns are not clear to me at all. Is it net charge for material ?

Mr. Wagner made a correction in the sketch.

MR. McKENZIE—We did not intend to omit the first two columns. Let it be understood that those two columns are added.

THE CHAIRMAN—It is understood that those two columns be added.

MR. ADAMS—I move that Rule 13 be adopted as read.

The motion was carried.

The Chairman continued the reading as follows :

"RULE 17.—The sills other than centre sills to which draw-timbers are attached may be spliced once and held by three $\frac{5}{8}$-inch bolts, as shown below. The splice may be located either side of body-bolster, but the nearest point of splice must not be within twelve inches of same.

Adopted.

"RULE 18.—Any company repairing foreign cars with wrong material, and not in compliance with Rules 15, 16 and 17, shall be liable for the cost of changing such car to the original standard, or to the requirements of Rule 17.

Adopted.

"RULE 19.—Any company using wrong materials in such repairs shall place upon the car at the time and place that the work is done a defect card, which defect card shall pass the car back to the owning road.

Adopted.

"RULE 20.—When either the bodies or trucks of cars are destroyed on a foreign road, the owners must be notified immediately.

Adopted.

"The company destroying bodies or trucks shall have its option whether to rebuild or settle for same.

Adopted.

"RULE 21.—If the company destroying the car elects to rebuild either body or trucks, or both, the original plan of construction must be followed, and the original kind and quality of materials used. The rebuilding must be completed within sixty days from the original date of damage or destruction. In such cases no allowance shall be made for betterments.

"RULE 22.—The settlement prices for new cars and trucks shall be as follows:

Box car, eight-wheel, 33 feet long or over	$450 00
" " " 32 feet long or under	430 00
Stock car, eight-wheel, 33 feet long or over	450 00
Stock car, eight-wheel, 32 feet long or under	435 00
Gondola car, eight-wheel, drop-bottom, 20 tons or over	400 00
" " " 15 " less	375 00
" " hopper-bottom, 20 tons or over	450 00
" " " 15 " less	425 00
" " plain, 33 feet long or over	350 00
" " plain, 32 feet long or under	300 00
Flat car, eight-wheel, plain, 33 feet long or over	300 00
" " " 32 " under	290 00
Box car, four-wheel	230 00
Coal car, four-wheel, ordinary	205 00
Gondola car, four-wheel, drop-bottom	305 00
Trucks, car, four-wheel, 1 pair	200 00

"Depreciation due to age shall be estimated at 6 per cent. per annum, upon the yearly depreciated value of bodies and trucks, provided, however, that allowances for depreciation shall in no case exceed 60 per cent. of the value new.

"Refrigerator cars and other freight-cars designed for special purposes, not specifically referred to above, shall be settled for at special rates, as may be agreed to by the parties in interest, but the deduction for depreciation due to age shall be on the same basis as for regular freight equipment cars."

MR. BRADY—The general managers of two different coal lines, who were compelled to leave last evening, asked me to call the attention of the convention to the fact that no price is made for 25-ton cars. We own but very few, and we do not ask for it, but these coal companies do. They thought the price should be made $475.

MR. CLOUD—I move that the figure be made 32 instead of 33, in the second line, the point being this: there is no provision there for a car that measures between 32 and 33 feet, and I would like to see it made to read "Box car, eight-wheel, 32 feet long or over," and the next line, "under 32 feet."

Seconded.

MR. SNOW—I move that the value be placed at $465.

THE CHAIRMAN—Perhaps you better settle the length question first.

MR. CLOUD—I will include in that motion, if the seconder will accept it, that the first, second, third and fourth lines be changed; the first 32 feet long or over; the second under 32 feet long; the third 32 feet long or over, and the fourth line under 32 feet long.

The amendment was carried.

MR. McKENZIE—I move that the price of the first four cars named remain as printed.

The motion was carried.

MR. BRADY—I move that the following be added after "Stock car, eight-wheel, 32 feet long or under, $435"; "Gondola car, eight-wheel, hopper-bottom, 25 tons or over, $475."

MR. ADAMS—I would like to inquire if those coal car concerns are private corporations or do they own a railroad?

MR. BRADY—They own a railroad. They are members of the Association.

MR. CLOUD—It seems to me that the price is rather high.

MR. BLACKALL—I move to make it $425 instead of $475.

MR. BRADY—The hopper-bottom is $450.

MR. CLOUD—I understood it was drop-bottom. You are not getting it in the right place.

MR. WALL—We have two cars to consider before we come to it.

THE CHAIRMAN—Then the next in order will be—

"Gondola car, eight-wheel, drop-bottom, 20 tons or over, $400.

"Gondola car, eight-wheel, drop-bottom, 15 tons or less, $375."

Now comes in your additional car, I presume. Mr. Brady offers an additional car:

"Gondola car, eight-wheel, hopper-bottom, 25 tons or over, $475."

Seconded.

MR. ADAMS—I move that it be $450.

MR. RHODES—Is there any one present who can state why this 25-ton is so much better than what we intend by the 20-ton car? Is there a specific car that any member knows of? What car is alluded to?

MR. LENTZ—The car we are building to carry 25 tons has a truck under it which is very much more expensive than the trucks we have under our 40,000-pound cars—more than enough expensive to make this additional cost of $25 to the car.

THE CHAIRMAN—Is it your pleasure that this additional car be added?

MR. McKENZIE—I move that that additional car be added, and that the price be placed at $450.

MR. LENTZ—I move, as an amendment to that, that it be $475.

THE CHAIRMAN—That is not an amendment. That is the original motion.

MR. LENTZ—The original motion was $475, and this would be an amendment to Mr. McKenzie's motion.

MR. CLOUD—The rule as now printed here says: "Gondola car, eight-wheel, hopper-bottom, 20 tons or over, $450." That includes a 25-ton hopper-bottom car. The case is covered already as it is printed, if the price be made $450. Therefore, I would suggest that the amendment is out of order, and I call for the question on the original proposition.

MR. CHAMBERLAIN—I would suggest, Mr. Chairman, that when we come to hopper-bottom, 20 tons or over, we might alter that and make it $425. We have not yet adopted 20 tons or over.

THE CHAIRMAN—It is a question whether the difference between 20 and 25 tons should not call for another scale.

MR. CLOUD—We have not been changing the prices of these cars thus far, and I really do not see why we should commence with this class of cars and change prices. If it was an equitable scale last year, it is probably an equitable scale to-day; I mean for one class as well as for the other, and I would support the motion as originally made.

THE CHAIRMAN—It is moved by Mr. Brady that we add one gondola car as read, the price to be $475.

A *viva voce* vote being taken, the Chair was unable to decide whether the ayes or the noes had it, and a standing vote was called for. This resulted in a tie, 20 voting for and 20 against the amendment.

THE CHAIRMAN—I have already voted once. I will say that we leave the rule as it stands.

MR. BRADY—I call for a vote by cars, Mr. Chairman. Two men here voted for one road.

THE CHAIRMAN—Will you allow me to withdraw my vote?

MR. BRADY—I claim the right to call for a vote by roads.

THE CHAIRMAN—Rather than do that I withdraw my vote, and say we will put it on, if you will allow me.

MR. SOULE—There is one other escape from the dilemma, if Mr. Brady will withdraw his call for a vote by cars. I would suggest an amendment providing for the introduction of another classification: "Hopper-bottom cars, 25 tons or over," then 20 tons and then 15 tons, the three being respectively $450, $425 and $375. I think there is no doubt that the assessment of valuation on those three classes of cars is out of proportion to what we agree on for the box cars. So I make it as a motion, if it be in order, that we introduce a new classification, "Hopper bottom, 25 tons or over, $450," followed by "hopper-bottom, 20 tons, $425; hopper-bottom, 15 tons, $375."

Seconded.

MR. BRADY—I am sorry, Mr. Soule, I must insist on having it decided.

MR. SOULE—I made a mistake in the wording of my motion. I meant that the 15-ton cars should be $400. I ask to have that correction made.

Mr. Soule's motion was carried.

THE CHAIRMAN—If there is no objection to it the Secretary will make the correction. Now, then, I think we start on the plain 33 feet long or over.

MR. CLOUD—I move that it be 32 feet long or over, and the next two cars will be modified in the same way.

THE CHAIRMAN—Then the next will be gondola plain, 32 feet long or over, $350.

MR. McKENZIE—I move that the price under 32 feet be $325.

MR. CLOUD—Perhaps Mr. McKenzie is looking at the wrong figure in the column.

THE CHAIRMAN—32 feet and over, $350. What is your pleasure?

It was adopted.

THE CHAIRMAN—Now, then, under 32 feet, $325.

The motion was carried.

THE CHAIRMAN—A flat car, plain, 33 feet long or over, $300.

MR. CLOUD—It should be changed the same as the other—32 feet long or over, and under 32 feet.

THE CHAIRMAN—It is moved that this be amended by changing the wording to 32 feet long or over, $300.

The motion was carried.

THE CHAIRMAN—The next is flat car, eight-wheel, plain ——

MR. CLOUD—I move that we make this read: "Flat car, eight-wheel, under 32 feet long, $290."

The motion was carried.

The next item: "Box car, four-wheel, $230," was, on motion of Mr. Adams, adopted as printed.

On motion of Mr. Verbryck, the price of coal car, four-wheel, ordinary, was made $200.

The price of a gondola car, four-wheel, drop-bottom, was fixed at $300.

THE CHAIRMAN—The next is: "Trucks, car, four-wheel, 1 pair, $200."

MR. ADAMS—I move that it be $225.

MR. MARDEN—I move in amendment to that that it be made $175.

MR. ADAMS—I would like to know if Mr. Marden is building as cheap at that?

MR. MARDEN—I want to get something for a car body that is destroyed.

MR. CARLTON—I would like to move as an amendment to the motion that we have two classes of trucks—trucks for cars over 20,000 pounds capacity to have a price, and trucks under 20,000 pounds capacity to have a price.

MR. LENTZ—I second the motion of the gentleman from the Baltimore & Ohio (Mr. Carlton).

MR. ADAMS—I withdraw my motion.

THE CHAIRMAN—Mr. Marden's motion is that we alter the price

from $200 to $175. There is another amendment that we make two classes of trucks.

MR. MARDEN—I will withdraw my motion until the question of classes is settled.

A *viva voce* vote was taken on Mr. Carlton's motion. The Chair was unable to decide whether the ayes or the noes had it.

MR. TOWNSEND—I would like to know how much more a pair of trucks is worth where a car is marked 30,000 pounds capacity and you afterwards change it with a paint brush to 40,000 pounds, which they are doing every day. I do not see why we should be obliged to pay more for that truck that is marked with a paint brush than we did before.

MR. MARDEN—It is oftener that we have our car bodies destroyed than our trucks.

A rising vote was taken; 23 voted for and 35 against Mr. Carlton's motion.

MR. MARDEN—Now, Mr. Chairman, I move that the price of one pair 4-wheel trucks be $175.

Seconded.

MR. McKENZIE—I hope that motion will not prevail. We are not giving these people a chance who are building good trucks to-day. I think we ought to keep it where it is.

MR. CLOUD—I agree with that, or else put it up $25. I think it is a little too early to make a separate classification of trucks, because there are very few, perhaps, of the increased-capacity trucks in service. But at the same time, I do not think, when there are more expensive trucks getting into service, that we ought to cut this price down. I think the proper move would be upward.

MR. ADAMS—I withdraw my motion.

MR. BLACKALL—I offer an amendment to Mr. Marden's motion, that it be $225.

MR. MARDEN—I withdraw my motion.

MR. BLACKALL—I withdraw my motion.

MR. WALL—I move that it stand as it is.

Agreed to.

The concluding part of the rule was adopted as printed.

The following rules were then read:

"RULE 23.—If only the body of a car is destroyed, and the company destroying it elects to return the trucks, they shall be put in good order and delivered free of freight, or other charges, to the nearest point on the road of the company owning the car.

Adopted.

"FURNISHING MATERIAL AND BILLING WORK DONE.

"RULE 24.—Companies shall promptly furnish to each other upon requisition, and forward free over their own road, material

for repairs of their cars injured upon foreign lines. Requisitions for such material shall state that it is for repairs of cars and give numbering and lettering of such cars when possible.

Adopted.

"RULE 25.—Bills for work done on defect cards or for material furnished on requisition shall be on the basis of the following charges and credits:

MATERIAL.	CHARGES.	CREDIT.
Cast Iron.....per lb.	2c.	½c.
Malleable Iron..... "	5.	½.
Bolts, Nuts and Forgings..... "	4.	1.
Cast Steel ..... "	9.	½.
Brass Journal Bearings..... "	16.	9.
Phosphor Bronze Bearings..... "	18.	10.
Pine (Yellow, White or Norway).... .per ft.	3.	——
Oak..... "	3.	——
Labor ....per hr.	20.	——

No percentage to be added for either material or labor.

MR. RHODES—I would move that two additional prices be added. Defect cards are given very frequently for box car side-doors, and also for box car end-doors. The general price among the western roads is $5 for a side-door and $3 for an end-door. Occasionally we have trouble with some roads who do not belong to the Association or who are not familiar with these figures. I would like to see them added to the list. It will be observed that the heading to this says: "Bills for work done on defect cards or for material furnished."

THE CHAIRMAN—It is moved that there be added to the material here, "One side-door $5, and one end-door $3."

MR. VERBRYCK—Does Mr. Rhodes calculate that for box and stock both?

MR. RHODES—My motion read: "One box car side-door, $5; one box car end-door, $3."

MR. ADAMS—Does that include—to save complication—both stock and box cars?

MR. RHODES—I accept that; I would make the motion read: "One box or stock car side-door, $5; one box or stock car end-door, $3."

MR. WALL—I hope that motion will not prevail, for this reason—if a car has the door off, it will be received without the door, and a defect card will be put in its place, and that car will go around through the country with nothing but that defect card on. No road can object to that car, because it has a defect card on; but in the meanwhile there is a good deal of work which that car cannot be used for, and the car

will not be as serviceable as if that door was put on as soon as it was torn off or blown off.

THE CHAIRMAN—It appears to me that that is the very thing Mr. Rhodes seeks to do.

MR. FORSYTH—This does not make the practice at all. It is merely a method of fixing a price for those doors.

MR. CLOUD—It seems to me that that covers a ground that might properly be covered.

THE CHAIRMAN—It is moved and seconded that we add to the material the two following items: "One box or stock car side-door, $5; one box or stock car end-door, $3."

The motion was carried.

MR. SNOW—Now, Mr. Chairman, ought we not to put in grain doors? (Cries of "No, No," from several members.)

MR. WOOD—I move that the rule as amended be adopted.

Agreed to.

The following rules were read:

"RULE 26.—In rendering bills, leased cars shall be treated as belonging to railway companies whose name or initials they bear."

Adopted.

"RULE 27.—For the mutual advantage of railway companies interested, the settlement for a car damaged or destroyed on a private track shall be assumed by the railway company delivering the car upon such track."

MR. BRADY—I move that the rule be laid on the table, and I will call the attention of the members to Rule No. 2, which reads: "Cars must be delivered in good running order, and returned in as good general condition as when received." I think that covers the ground. If a car is delivered to the New York Central they are responsible for it until it is returned. I think we are going into the legal aspect of the case when we take up this rule.

MR. CLOUD—Mr. President, Rule 2, referred to, does cover the ground to a certain extent; but this makes it a little more definite, and if Mr. Brady will observe, this rule is now worded very differently from what it has been before, and I think it probably will be quite as unobjectionable to his road, as worded, as Rule 3 is. It has not any legal aspect; that has all been cut out. With the rule as it now stands, it seems to me that all of the valid objections raised to what we have had heretofore are removed.

MR. BRADY—I do not think the rule is necessary. If a car is delivered to a connecting line in good order, that line is compelled to return it in good order. We destroyed two cars on a private track this year and we paid for them. We think that if a car is delivered to us we are responsible for it. There is no use for this rule at all. It is only

repetition. Rule 2 covers the ground. But this rule opens the door to other rules in the future.

MR. MARDEN—I hope that Mr. Brady's motion will not prevail, for I believe that the rule is needed. Mr. Brady states that the New York Central is responsible for all cars delivered to them, and while they may be responsible, yet there are numbers of cases that I can cite where roads have claimed that they are not responsible for cars which they had set upon private tracks. I know there has been some legal action taken upon the matter, but only by one or two roads. I know that it is the voice and the opinion of a large number of roads that the roads setting such cars on private tracks should be responsible for them, and I believe with Mr. Cloud that this Rule 27 should stand as it is.

MR. SOULE—I think there is a little sophistry in Mr. Brady's remarks in referring to Rule 2 as covering the whole ground. Rule 2, as I understand it, would be an entire protection to the New York Central Company in a matter between them and the owner of a private siding. If the owner of a private siding undertook to return to them a car wrecked or burnt, they would quote Rule 2, and say that car must be in as good running order as when we put it in there. But that gives no relief whatever to the owner of the car. If it was a Chicago, Burlington & Quincy car, the New York Central would say: We have nothing to do with that case; we delivered the car to the owner of a private siding and you must see that party about it. Now these owners of private sidings are obscure parties mostly. The parties who are most familiar with their status are the railroads delivering those cars to those private sidings, and in a great many instances the mutual relations of the two, the railroad companies and the private sidings, are made the subject of special contracts and agreements which are entirely out of the ken of this Association. So I would like to point out what I consider a little of the sophistry on Mr. Brady's part in referring us to Rule 2 as covering the ground, because I do not think it does cover the ground.

MR. ADAMS—I cannot see the propriety at all of Mr. Brady making objections. He says they are willing to pay for it; that they assume the responsibility. If that is so, it is very unbecoming of him to make an objection. He comes out here voluntarily, and says he is willing to pay for cars damaged or destroyed on a private track. They are already tied up with No. 2; but he does not want this rule, because he is afraid it will tie him a little tighter. I think it is very inconsistent of Mr. Brady to make such a statement. If I were he I should withdraw it mighty quick.

MR. BRADY—In reply to Mr. Soule, I would like to state that the two cars I referred to as being destroyed belonged—one of them to the Philadelphia & Reading, and the other to the C. C. C. & I. We did not refer the C. C. C. & I. to Mr. Osborn. We received the C. C. C. & I. car at Buffalo. The Philadelphia & Reading car we received at Lyons. We were responsible for both those cars, and we paid for them. I do not see that there is any use whatever for that rule. The rule was presented

by Mr. Stanley Goodwin, of the Lehigh Valley, some two years ago, and carried, because there was a question then between the New York Central and the Lehigh Valley. I do not know of a case that ever arose since in which there was any doubt or any question about destroying a car on a private track, except this one case, and that was a case between the Lehigh Valley and the New York Central. Since then I heard of a case where Mr. Adams destroyed a car on a private track, and tried to get out of paying for it.

MR. ADAMS—I would like to hear of that case.

MR. BRADY—It was about a year ago. You traced it up and found that the car was being used locally on your line. It was a grain line elevator car. It was used locally between Boston and some paper manufactory on your line. You rebuilt the car. You wanted to return the car, and sent it to East Albany. You traced the car and found your engineer had put it on the side track of a paper company. I will give you the facts and figures and dates.

THE CHAIRMAN—I do not think it is necessary that we should go into the details of matters that do not concern this question as far as this convention is interested. Rule 27, Mr. Brady moves to strike out.

Mr. Brady's motion was lost.

On motion of Mr. Lentz, Rule 27 was adopted as read.

The following rules were read :

"RULE 28.—Any railway company may become a party to this Code of Rules by giving notice through one of its general officers to the Secretary of the Master Car-Builders' Association."

"Any railway company which is a party to this Code of Rules shall be bound by same through its successive revisions, until one of its general officers files with the Secretary of the Master Car-Builders' Association its notification of withdrawal.

"Acceptance or rejection of this Code of Rules must be as a whole, and no exception to an individual rule or rules shall be valid."

Adopted.

"RULE 29.—The Executive Committee of the Master Car-Builders' Association shall receive and consider all changes, amendments and additions to this Code of Rules which may be proposed to them during the year, and shall report all such proposals to the Association at the time of the Annual Convention and revision, with their recommendations in reference to same. In case of any dispute or question arising under these rules the same shall be referred to the Executive Committee, whose duty it shall be to decide the case. The decision shall be final and binding upon all parties concerned."

MR. McILWAIN—I would like that to read as follows :

"In case of any dispute or question arising under these rules the same shall be referred to a sub-committee of three or five to be appointed by the Executive Committee, whose duty it shall be to decide the case."

My object in proposing this amendment is that very often we have cases that we want to submit, and we want an answer in a short time. If it goes to the Executive Committee it takes six months. Let this sub-committee be a standing committee. Its members should live close together, so that they may be reached either by telegraph or letter, and a decision soon arrived at.

MR. LENTZ—If Mr. McIlwain were a member of the Executive Committee I doubt whether he would make this proposition. The members of the Executive Committee have a great many meetings to attend, and are obliged to leave their business to attend to the meetings quite as often as they can well do so, and if there is a sub-committee appointed out of this Executive Committee, it will be necessary that the members appointed on that committee should have the additional duties to perform. I think the rule as it stands referring it to the Executive Committee is proper, and will receive consideration in due time, and will settle all cases.

MR. McILWAIN—Allow me to correct the gentleman. I should have said a sub-committee, or a committee appointed by the Executive Committee. We do not care who it is, so that we get the work done promptly.

MR. KIRBY—Call in an arbitration committee.

MR. CLOUD—I do not want to make it too easy for parties to have a dispute under these rules. I think if we do make it too easy, the disputes will be much more frequent than they ought to be. The Executive Committee, I hope it is understood, did not themselves propose this measure. They put it in here simply because it was proposed in various ways, the majority of which were something like this—by correspondence addressed to us during the year. But I hope that members will not think that they will get an answer right away. I hope they will not allow a matter to grow into a dispute that will interfere with the settlement of a bill.

MR. BRADY—I would like to add in the last clause that the decision shall not be final and binding upon all parties concerned until approved by the convention. I think that will give us all a chance next year to have a say. The Executive Committee may have one way of thinking and the convention another. The Executive Committee could be very arbitrary in this matter if they were so inclined.

THE CHAIRMAN—If that were done the decision of the Executive Committee would amount to nothing. You might as well leave it to the convention at once.

MR. BRADY—It will settle it for the time being, but it would not be a final settlement until the convention met and approved the decisions of the Executive Committee. There may be some disagreements during

the year. One road may take one view of the rules, another may take another, and whatever the Executive Committee might decide they would work under until the next convention, and then bring the question up.

MR. CLOUD—I think that is the way it is intended to be. It is not intended that the question shall be settled in principle and never again raised by this convention on account of this decision of the Executive Committee. The decision shall be on the question that arises, and it is, I hope, clearly understood that at the next annual revision of these rules that ground can be gone over and covered as this Association thinks proper, even though it may be contrary to the decision of the Executive Committee.

MR. BRADY—I do not understand it that way. I have just asked the Secretary, and he rather agrees with me, I think.

MR. FORNEY—I have taken no part in the discussion of these rules because it is none of my business. I think there is a little justice in Mr. Brady's view of the matter. I should think a railroad company would be a little backward in subscribing to rules which are mandatory in prescribing that in case of dispute they shall abide by the decision of the Executive Committee. It compels a railroad company to submit any dispute to the Executive Committee and abide by its decision. It seems to me that the point could be met much better by an amendment like this :

"In case of any dispute or question arising under these rules, if the parties thereto shall agree to abide by the decision of an arbitration committee, the Executive Committee shall appoint such a committee, to consist of three members of this Association."

That would leave it optional for the parties to say whether they will submit the question to arbitration or not.

MR. McILWAIN—I will accept that amendment.

MR. ADAMS—It seems to me that this rule is just as plain as any one can make it. It simply refers a question in dispute to the Executive Committee. The decision of the Executive Committee in that case would be final, but it is open to revision at any time afterward. I mean a similar case would be open. That particular case would not be open. I cannot see what objection there would be to this. We trust the Executive Committee. The Association puts its business into the hands of the Executive Committee. It seems to me perfectly legitimate that the Executive Committee be empowered to do this thing. The sub-committee had a number of letters requesting this very thing to be done.

MR. FORNEY—It occurs to me that some very important cases might arise which a railroad company might be compelled to submit to the Executive Committee, and would then be compelled to abide by its decision.

MR. ADAMS—The cases supposed to be covered here are cases in reference to car construction—the very cases that all managers put into the hands of their mechanics to settle.

MR. CLOUD—Mr. Forney has made a very important point, and it

is one which I have overlooked, and I would suggest the following : The point is we want to provide a means so that parties who are willing to do so may have it settled by the Executive Committee. I therefore would suggest that the proper way of wording it would be almost as it is here:

"In case of any dispute or question arising under these rules, the same *may by mutual consent* be referred to the Executive Committee, whose duty it shall be to decide the case. This decision shall be final and binding on all parties concerned.

MR. BRADY—I second Mr. Cloud's motion.

MR. RHODES—I would like to explain a little why it is so important for us to have this question settled. With the gentlemen who are here at this convention we shall not probably have any dispute. Any of us who are in doubt about questions that come up have brought them forward and have had their motions carried or not carried ; and we know how to interpret them. There are parties who subscribe to the rules who are not present here. They do not know the discussions that have taken place, and they are the ones we have most trouble with. We have found that parties who merely subscribe to our rules dictate to us the interpretation of those rules. They have not heard the discussions that we have at the convention, and it is with them we have the difficulty. This, as Mr. Cloud has changed it, it seems to me will cover those cases very well. We will not have those who do not meet with us here dictate to us what the interpretation is. I hope that when these decisions are given, that the Executive Committee will publish them for the benefit of the Association in some of the railroad papers, that we may refer to them during the year. That will probably settle it without burdening the Executive Committee.

THE CHAIRMAN—Do you wish to add that to the motion ?

MR. RHODES—I do not think it is necessary. I think it will be taken as a suggestion.

MR. FORNEY—Mr. Cloud's substitute obviates what seems to me the most important objection to this clause. It strikes me that if the committee were made a sub-committee of the Executive Committee, it would be more easily handled. But I accept Mr. Cloud's amendment to my motion.

MR. WALL—I would like to make a still further amendment. I agree to Mr. Cloud's motion entirely, but I think that the last clause could be altered with advantage so that it would read : "This decision shall be binding, until affirmed or rejected by the Association in convention assembled."

MR. FORNEY—That would leave the matter open entirely. It would not be a decision.

MR. WALL—That would give the right of appeal. It is just the point Mr. Brady brings up.

MR. FORNEY—Would it not be unusual to agree to submit a case to arbitration and then reserve the right of appeal ? The very purpose of submitting to arbitration is to get a decision.

MR. BRADY—I understand that the question can be brought up again, next year, and the decision the Executive Committee makes is binding for that year only until the convention meets.

MR. ADAMS—That case is not going to be raised again?

MR. BRADY—No.

Mr. Cloud's amendment was adopted.

The following rule was read:

"RULE 30.—In the revision of these rules by the Association, each railway shall be entitled to one vote for each one thousand 8-wheel cars (or major part thereof) owned or in process of purchase. Two 4-wheel cars shall count as one 8-wheel car. A two-thirds vote shall be necessary for adoption."

MR. MARDEN—I would move to amend this rule to read as follows:

"In the revision of these rules by the Association each railway company shall be entitled to one vote for each active member, and one vote for each representative member, with an additional vote for each one thousand 8-wheel cars."

MR. CLOUD—If I may be allowed to speak before this is seconded I would like to say one word. I think that this is the way we stand now—these rules are amended by the Master Car-Builders' Association, in which every active member has a right to a vote. Now this simply says that railway companies have also a right to vote. The question came up yesterday afternoon, when I claimed 49 votes. We have 47,700 cars, which is a major part of another thousand, making 48, and I have got a vote because I am a member of this Association, and I pay five dollars for it, just the same as for every thousand cars.

MR. MARDEN—I find that my name is only entered as a representative member. I want the privilege for one additional vote as a member of the Association. I was allowed only four votes yesterday. We have the major part of 4,000 cars. We have 3,570, I think. I want the privilege of a fifth vote. The company pays for it.

MR. FORNEY—I think the whole difficulty might be overcome by striking out Rule 30 and making an amendment to the Constitution. The Constitution says in regard to representative members:

"Such members shall have all the privileges of an active member, including one vote on all questions, and *in addition thereto* shall on all measures pertaining to the adoption of standards or the expenditure of money have one more vote for each full one thousand cars which are owned."

The amendment I would propose would be this, that the rule should read:

"Such members shall have all the privileges of an active member, including one vote on all questions, and in addition thereto on all measures pertaining to the adoption of standards, *the revision of the Code*

of Rules governing the condition of and repairs to freight cars for the interchange of traffic, or the expenditure of money, have one more vote," etc.

I think that would cover the whole difficulty. If they come up for discussion and revision in the Master Car-Builders' Association I think that the rules of the Master Car-Builders' Association should govern that revision.

MR. CLOUD—I move that the rule be adopted as read.

The motion was carried.

The following rule was read :

"RULE 31.—This Code of Rules shall take effect August 1, 1886, and shall be introduced for discussion and revision at one session of the Master Car-Builders' Association Convention this year."

The rule was adopted.

MR. CLOUD—I wish to revert to Rule 3, on the first page, for a moment. I would call for a vote by cars, if necessary, to place back 2½ inches ; but I hope it will not be necessary to do that. The matter stands in this way : we have a number of cars which carry 50,000 pounds of coal. They do not weigh any more on the journals than 40,000-pound box cars do, or very little. The car-bodies themselves are very light. They were originally built with 3½-inch journals, and the journals under, if they have been in service very long, would necessarily be less than 3½ inches—perhaps not a sixty-fourth of an inch ; and I do not know that the size that prevailed last year of 3½ inches has caused you any difficulty. If it has, the cases have not been cited ; but if it has not, I cannot see why you should cut out our cars, which do first-rate and do not give us any trouble by this new limit. It will cause a certain amount of stagnation at certain points, and some of you will feel it as well as ourselves, if you insist upon it. Unless you have very distinct and good reasons for departing from the practice of last year, I hope that you will by a *viva voce* vote, so as to avoid the necessity of calling for a division by cars, reconsider this, and in pursuance of that I would move that section *i* of Rule 3, that part of it relating to the limit for a 50,000-pound car, be reconsidered.

The motion was carried.

MR. CLOUD—I move that the limit for a 50,000-pound car be made 3½ inches.

The motion was carried.

MR. WALL—Before the final vote is taken on the rules, I would like to say that the sub-committee appointed to codify the rules suggested a number of marginal notes to be attached to the printed copy of the rules to assist in finding them. The Executive Committee adopted the suggestion of the sub-committee, and it was intended that the marginal notes should be printed with this proof, but the resources of the local printing-office were not sufficient to carry this out. I therefore

would make a motion that the Secretary be instructed to print these marginal notes with the rules when the copies are issued.

The motion was carried.

MR. SOULE—The support which has just been given to Mr. Cloud's motion for a reconsideration of clause *i* of Rule 3 leads me to hope that the convention will look favorably on a similar proposition with respect to the first clause. I thought yesterday that the convention acted very promptly and even hastily in accepting Mr. McKenzie's motion, and you now have the anomaly of seeing a difference of one-half inch in the journal limit for 60,000 and 50,000-pound cars, which I think is inconsistent and unfair. We have some personal interests to protect in this matter, inasmuch as we are just putting out some 1,200 cars of 60,000 pounds capacity, mounted on Master Car-Builders' axles. I am going to propose a reconsideration of that clause, with the suggestion that that limit be reduced to 3½ inches, and also with the proposal that the Committee on Subjects suggest a committee to consider the question of a new axle for cars of 60,000 pounds capacity and upwards. Therefore, I move a reconsideration of that portion of clause in Rule 3 which relates to the journal for a 60,000-pound car.

Seconded.

MR. KEELER—I amend that motion by moving to reconsider the vote on the 40,000-pound car and on the 30,000-pound car as well.

MR. SOULE—I accept that.

The motion was carried.

MR. SOULE—I move that clause *i*, Rule 3, be amended ; that is, that portion of it which has not been disposed of, to read :

"60,000-pound car, limit 3½ inches.
40,000-pound car, limit 3 inches.
30,000-pound car, or less, limit 2½ inches."

That motion, if it is carried, will, with Mr. Cloud's motion, make the rule read exactly as printed here.

MR. MARDEN—We passed on the sizes of these journals yesterday, and I thought at the time we all voted understandingly. It seems we did not. I simply want to put myself on record as saying that I think you make a mistake in changing these sizes.

MR. SOULE—I hope the Committee on Subjects will accept the suggestion to provide for the appointment of a committee on new standard axle for cars of a larger capacity. Some prominent trunk-lines have already taken steps toward that ; and of course it would be well to harmonize with that practice, if it could be done.

MR. McKENZIE—I move that the size of journal be 3½ in. for 60,000 pounds, when the axles are steel.

MR. RHODES—It seems to me that we are getting just back where we were last year on this thing. Last year, in a hurried way, we got these small journals. The Association have been endeavoring to get large journals under their cars for a number of years past. In 1873 the Association adopted a journal 3½ inches in diameter, and here, at this

moment, we are wanting to run cars and say that they are not unsafe to run unless they are down to 2¾ inches in diameter, because this rule says less than 3 inches for a 40,000-pound car. The danger is not necessarily in breaking the journal. That is not the trouble. The trouble is that these small journals get hot. A hot journal is very apt to burn off. Serious accidents happen on the road from that. I do not think the Association acted hastily yesterday in voting this way. I do not want to let our 40,000-pound car run on less than a 3-inch journal. I hope the members of the Association will confirm what they did yesterday, and make the axle 3¼ limit.

MR. MARDEN—I agree with Mr. Rhodes perfectly, and I do hope that members of this convention will not put themselves on record as acting hastily upon so important a subject as this. We have had the same experience as Mr. Rhodes has had in the past six months with the class of cars coming over our line, with small journals loaded too heavily; but they were loaded within the limits prescribed by the rules.

MR. CLOUD—In further discussion o this motion, I would say that I agree in part with Mr. Rhodes, but not entirely. We are now making rules for the interchange of traffic, and they have to be down to the limits, and therefore the remnants of old practice are still coming in under the axle, and making the size an inch less or so will not bring in many cars of that size, and probably will be as safe as it was last year at least. But I would move, in order to get the matter into a shape more likely to be accepted by the convention, an amendment to the motion, so that it will make the limit size of a 60,000-pound car journal 3⅜ inches, of a 40,000-pound car 3¼ inches, and of a 30,000-pound car or less, 2¾ inches; that will be coming up gradually, and it will give an indication that we are going to continue to do so, and it will give the members of the Association and the railroads they represent time to change their vast equipment of cars to conform to this requirement.

MR. SOULE—I accept that amendment.

MR. RHODES—I still do not agree with Mr. Cloud. It seems to me that there has been time enough given to this matter of journals by the Association. From 1873 to 1886 is a long time for everybody to consider it, and those companies which have taken action in the matter ought to begin to reap the benefit of it. We want the larger journals under 40,000-pound cars. We are removing now in our shops smaller journals. I think it is time for the Association to take some steps in this matter. If the records are looked into, it will be found that certain roads are not using the Master Car-Builders' axle now, and it is holding us back in getting the good results of the large journals. I hope that the amendment will not be carried.

THE CHAIRMAN—As amended, the 60,000-pound car would have for limit of journal 3⅜; the 40,000-pound car would be 3¼, and the 30,000-pound car would be 2¾.

MR. McKENZIE—I suppose that in equity the 50,000-pound car ought to be 3⅜.

THE CHAIRMAN—That is settled, sir; we reconsidered that matter and settled it. All those in favor of the amended sizes will signify by saying aye.

The motion was carried.

MR. SCOTT—I call for a division.

MR. BLACKALL—I call for a vote by cars.

MR. CLOUD—I move that this Code of Rules, as now amended, be adopted as a whole.

MR. MARDEN—Before this motion is put, I wish to revert for a moment to section *k* of this same rule—that part where it states that the maximum gauge of wheels shall be 4 feet 5½ inches. I think that that rule, as we passed it yesterday, will produce more of a blockade than the matter of journals. A good many have that opinion. I move its reconsideration.

The motion was lost.

MR. KIRBY—I will offer a motion that we commence at the beginning where we did yesterday afternoon and go through all these rules *seriatim.*

MR. CLOUD—There is a question before the house, moved and seconded; I call for the question.

The motion to adopt the rules as a whole was put and carried.

MR. FORNEY—Before the members leave, I will call attention to something that will probably give the Secretary some trouble, and that is in regard to voting on the rules. Mr. Cloud represents 47,711 cars, on which I believe he claims 49 votes. Am I correct, Mr. Cloud?

MR. CLOUD—Yes, sir; I claim that the Constitution of the Master Car-Builders' Association gives me 49 votes on these questions.

MR. FORNEY—The Constitution of the Master Car-Builders' Association, I think, would not.

MR. CLOUD—I think these rules partake more of the nature of a standard than anything else that is provided for in the Constitution.

MR. MARDEN—I take the same ground that Mr. Cloud does.

MR. FORNEY—The point is of some importance or I would not detain the members. The Constitution says: "Such (representative) member shall have all the privileges of an active member, including one vote on all questions, *and in addition thereto* shall, on all measures pertaining to the adoption of standards or the expenditure of money, have one more vote for each full one thousand cars which are owned."

MR. CLOUD—I would ask if that does not give a representative member one vote on the Rules of Interchange?

MR. FORNEY—Certainly.

MR. CLOUD—Now, Rule 30 says that each railway company shall be entitled to one vote for each one thousand eight-wheel cars, or major part thereof. Therefore, that gives a man who represents 1,700 cars two votes for the railroad and one vote for himself.

MR. FORNEY—The difficulty about it is this—Rule 30 is not in accordance with the Constitution. You take one vote from the Consti-

tution, and you take your vote for cars from Rule 30. If Mr. Cloud claims 49 votes instead of 48, I will take great pleasure in sending him a bill for the additional $5.

MR. CLOUD—I have always paid it at that rate.

MR. FORNEY—I think not. I never sent a bill at that rate.

MR. CLOUD—Then that was the Secretary's mistake, and I think he owes us five dollars.

MR. FORNEY—It was not the Secretary's mistake, because he was governed at that time by the rules of the Master Car-Builders' Association, and not by the rules governing the Interchange of Traffic.

I think it is an important matter, and for that reason I wish to announce now that next year I will introduce an amendment to the Constitution, that after the word "standards" in Section 3 of Article III., be added, "the revision of the Code of Rules governing the Condition of and Repairs to Freight Cars for the Interchange of Traffic."

THE PRESIDENT—There is a great deal of business before the Association, and I hope the members will all be promptly here at 3 o'clock. Otherwise there will be a great deal of business left unfinished. The President feels, a little, as though it were his fault we did not get along faster, being a new hand at the bellows. If anything is left over he will be blamed for it; so I hope the members will help him along all they can.

AFTERNOON SESSION.

The Convention was called to order at 3 P. M.

THE PRESIDENT—The first thing in order will be the amendment to the Constitution postponed from 10.30 to-day until after we got through with the rules.

MR. BLACKALL—I move that the subject be laid over until our next convention.

Seconded.

MR. FORNEY—That amendment was proposed by a member who is not present at the meeting.

MR. BLACKALL—He has gone away; that is why I offered it. Mr. Wall has left the place.

The motion was carried.

THE PRESIDENT—The next subject will be The Maximum Outside Dimensions of Freight Cars. I will call for the report of that committee.

MR. FORNEY—The Secretary has no report. Mr. Smith, I believe, is not here. Is Mr. Watrous here, and does he know anything about the report on that subject?

MR. WATROUS—I do not.

MR. HITCHCOCK—I move that the subject be continued.

MR. FORNEY—I would suggest to Mr. Hitchcock that if the subject is to be continued the committee ought to be changed. I do not

think Mr. Buchanan would be willing to serve on that committee. I saw him, and he said that it would be impossible for him to do anything on it. Therefore, I think your motion should be that the subject should be continued and a new committee appointed.

MR. HITCHCOCK—I accept that amendment.

The motion as amended was carried.

THE PRESIDENT—The next subject will be Standard Draw-Gear for Non-Automatic Couplers.

MR. FORNEY—I would say that the committee handed a report to the Executive Committee, and the Executive Committee decided it was not a proper one to submit to the Association. It is therefore being withheld and will not be presented. I move that the subject be continued and a new committee appointed.

The motion was carried.

THE PRESIDENT—The next subject is Appliances to Prevent the Slipping of Wheels, both Passenger and Freight.

The report of this committee was read by the Secretary, and is as follows:

REPORT ON SLIPPING OF WHEELS OF BOTH PASSENGER AND FREIGHT CARS.

Your committee, appointed to report on appliances to prevent slipping of wheels of both passenger and freight cars, have from investigation and replies received in answer to circular of inquiry, learned of the following appliances for this purpose:

1st—Is a device furnished by Robert Miller, Assistant Superintendent of Michigan Central Railroad, which was planned and constructed in the shops of the Company, and is reported to have been in successful operation for two years past.

The device is illustrated by Plate XIV., which is explained by Mr. Miller, as follows:

The drawing shows a freight car truck, but the construction is similar in a passenger car truck. The power in that case emanating from the air cylinder instead of brake shaft.

Whenever the strain in braking becomes so great as to effect a friction between wheel and rail, the chain will be clamped and held immediately, so that no additional strain on the brake-rod, however great it may be, can be transferred to the brake lever. Pulley *A* and *B* are pivoted to an arm fixed upon the channel bar. Pulley *C* is pivoted to the forked end of the floating bar *D*, which is hooked over the crank-arm *F*, fulcrumed at *G*, on an iron plate riveted to the channel bar, and is provided with a sleeve affording a seat for one end of the swing

hanger-bolt. The length of the crank and the distance between the centre of the bolt and fulcrum of lever must be arranged according to the weight of the empty car, and due allowance must be made for friction, and in such a proportion that the crank-arm will be pulled over whenever the strain on the rod is pressing the shoes against the wheels with a force of about four-fifths of the friction between the wheel and rail at the ordinary condition of the track.

It will be seen that the braking is actually done in the usual way, the attachment coming into operation only whenever and as soon as any overstrain is brought upon the rod; just at the instant when the strain would become dangerous, the crank will be pulled over. The resistance of the weight of the car being no longer able to hold the same, the floating bar and the pulley pivoted in the fork, will instantly travel forward and wedge itself between the two fixed pulleys, thereby locking the chain absolutely, so that all further strain will affect that part of the brake connection only which lies between the power and the lock. This attachment limits the force of the braking, being an automatic brake to the brake.

The crank-arm will average three or four times the length of the lever by which the hanger-bolt is raised; therefore, while the pulley on the floating-bar travels 2 inches to lock the chain securely, the one end of the hanger-bolt is lifted about $\frac{1}{2}$ an inch. This way the end of the bolster is lifted about $\frac{1}{4}$ inch, and the centre of one end of the car about $\frac{1}{8}$ inch.

Thus we have a simple, cheap and automatic contrivance, by which we apply more power to the heavily-loaded car than to the empty one, and this in accurate proportion to the load.

2d—Is a patented device, consisting of a strong steel coil spring inserted in the bottom connection or lower brake rod. When the pull is greater than the strength of the spring, the latter yields. This was tried on some sleeping cars on the Lake Shore & Michigan Southern Railroad, and reported by Mr. Kirby, General Master Car-Builder, as overcoming the difficulty in part only.

3d—A device fitted to a baggage-car on the Chicago, Milwaukee & St. Paul Railway, consisted of two sand boxes, one placed immediately behind the front truck and the other in front of the back truck, and arranged so as to automatically throw a stream

of sand upon the rail when the piston of the brake cylinder had reached a certain point.

4th—E. B. Wall, Superintendent of Motive Power, Pittsburgh, Cincinnati & St. Louis Railway, reports that they have fixed a maximum pressure for engineers to carry on passenger trains.

While this pressure is great enough to slide light trains, it is nevertheless as near the average as they could attain. They endeavor to hold the engineers to it, and discipline them when it is exceeded. To get the results of what the engineers are actually doing, they have placed in one of their baggage cars an Edison recording gauge; this guage is provided with a roll of paper upon which is drawn a line showing the pressure at all times from one end of the line to the other, and indicates very clearly what pressure is being carried by the engineer, and whether he maintains it regularly and makes good or bad stops.

5th—R. H. Soule, Superintendent Motive Power of the New York, Lake Erie & Western Railway, says, when connected with the Northern Central, and Baltimore & Potomac Railroad, they were considerably troubled on account of sliding wheels under baggage and express cars. These cars were shorter and lighter than the coaches, yet had the same brake leverage. They devised a special automatic cut-off valve which was placed between the auxiliary reservoir and the brake-cylinder under each baggage and express car. These cars were first experimented with in the yard, and a maximum pressure thus determined under which these brakes could be applied without danger of slipping the wheels. The automatic cut-off valves were then set at that point, so that whatever pressure might be carried on engine it would be automatically cut off when it reached the maximum allowable under each car.

The results, he believed, were satisfactory, inasmuch as for full six months, as far as he could remember, they did not have a single case of a slid wheel under baggage and express cars.

One member reports having reduced the pressure from about 80 pounds to 60 pounds in the use of atmospheric brakes, and finds they can handle their trains fully as well; and it has done away almost entirely with slid wheels.

Among the suggestions offered are the following:

One member suggests the use of dead levers, wherever they can be used, and brakes on eight wheels under all eight-wheeled cars.

Two suggest that the leverage be proportioned to the weight of the car, less 20 per cent., and if atmospheric brakes are used, limit the pressure by an automatic governor, such as is used by the Westinghouse Company.

Others suggest reducing purchase of brake levers.

Except in the first-mentioned device there is no provision made to overcome the variation in the weight of individual cars, when loaded and empty. This would seem to be an important consideration in any device that is to be made thoroughly effective, as brakes, given the maximum power and so adjusted that they could be applied without danger of slipping the wheels under a load of 40,000 pounds, would be little or no protection against sliding them when the car is empty or partly loaded.

Your committee has not learned enough of definite and reliable results from the use of the appliances reported, to warrant them in expressing an opinion as to their merits. In view of the importance of the subject we trust there will be a full discussion, and would recommend its further consideration by a new committee.

M. P. FORD,
H. H. ROBERTS,
J. P. COULTER,
Committee.

On motion of Mr. McIlwain the report was accepted.

MR. MARDEN—If it is in order I would like to ask a question of the Executive Committee. What I wish to know is, why in the matter of automatic draw-bars they did not recommend a further experimenting on draw-bars of the class of the Miller hook.

THE PRESIDENT—I do not think that is in order just now, Mr. Marden, until we dispose of this subject.

MR. MARDEN—I asked if I were in order.

THE PRESIDENT—I did not know what you were going to say.

MR. SCOTT—I hope this matter of the slipping of wheels will go to another committee. I consider the importance of this subject as almost paramount to anything we have. I presume that every one connected with the application of brakes and their maintenance will regard it as fully as important as anything we have to deal with. I think it deserves full consideration. I would like to see it go over to another committee.

MR. MARDEN—When I asked the privilege of putting a question I supposed the discussion on this subject to be closed, else I should not have asked it. In reference to the sliding of wheels, I would say that we have had a good deal of trouble from the automatic air-brake on the line of our road, not only with our own cars, but with cars that come

from other lines. I have reduced the leverage on our cars from what was recommended by the Westinghouse people at the time they put them on considerably. The brake lever, when they were first applied, was in the proportion of 4½ to 1, and we have reduced that, so that it now stands 4 to one. We have also reduced the leverage on the air-brake lever; but we found that it did not produce the desired result. About four weeks ago the Superintendent of Motive Power, by direction of the General Superintendent, issued some notices to the engineers, limiting them in regard to the pressure of air that they should carry. If I remember right it was 50 pounds on local trains and 60 pounds on our express trains. I may be mistaken about just the number of pounds that was carried, but I think that was just about the number of pounds. In the ast four weeks I have had reports of four wheels flattened by sliding, and two of those wheels were accounted for outside of anything that could be affected either by rates of leverage or anything that the engineer could do in reducing the pressure of air.

MR. KIRBY—If the gentlemen here who have charge of the locomotive departments would give us the pressure on their engines, we would then be able to ascertain about the variation of different roads in that respect. Some roads, I understand, carry 90 pounds, while other roads will carry 70 pounds, and claim they do the braking fully as well with 70 pounds as with 90 pounds. If that is the case I would like to know it. Our pressure is supposed to be 70 pounds. Still we slide some wheels. Our truck levers are three to one. They are nine inches and twenty-seven inches at the lower part. The dead lever is six and eighteen. Our cylinder levers are thirty inches, and for a 40,000-pound car the connection is in the centre of those levers, but even with that we have some sliding of wheels. It seems to me that unless the pressure is governed at the locomotive, if there is pressure enough there, they can slide the wheel, I do not care how you arrange the levers on the trucks. Perhaps some of the gentlemen can enlighten us a little on the pressure upon the locomotive.

MR. BLACKALL—Perhaps it might be well for this Association to send a resolution to the Master Mechanics' Association, requesting them to provide a safety-valve for the air-receivers, say of 60 pounds. Then we might manipulate our levers to suit our cars.

MR. ADAMS—I would second that suggestion of Mr. Blackall's, if he would consider it as a motion. I think that would be very advisable. It would bring the subject before them, at any rate, for their consideration, and it might get ventilation that would be beneficial to us all.

THE PRESIDENT—Do I understand Mr. Blackall to make that as a motion

MR. BLACKALL—I will offer it as a resolution.

MR. FORSYTH—I would say there is quite an objection to that, in regard to the maximum pressure, in regard also to the difference of the high pressure some of those carry, and the lower pressure which others carry. This 90 pounds which Mr. Kirby mentions is the extra

pressure which is used in the Westinghouse system in their improved valve for the relief of brakes, and if you do away with that you will have a good deal of trouble in releasing the brakes. I think that it would not be wise to put a safety-valve on the main reservoir, to reduce that 90 pounds, because you would then not have the advantage of this extra pressure, and would be troubled with a tardy release of the brakes. That probably explains the difference—that the 90 pounds is the extra pressure which is carried, which is 20 pounds more than the 70 pounds, which is the standard for the pressure in the train pipes.

MR. SNOW—It seems to me that about the only sure way to prevent this extra pressure going into the brake-cylinder is to put a safety-valve between the reservoir and the cylinders, as Mr. Soule tried ; either put it there or in the brake-cylinder itself, so that you cannot get more air than you figure on for your car.

MR. FORSYTH—There is no objection at all to placing safety-valves on the car cylinders. That belongs to the car department, and there is no necessity for passing a resolution to refer it to the Master Mechanics.

MR. MARDEN—How much quicker can you relieve the air-brakes with this amount of pressure than with the regular 70 pounds, or even 60 or 50 ?

MR. FORSYTH—You can release so much quicker that the use of this extra pressure does away with all difficulty about the release of the brakes, which is a constant trouble with all roads that have not used it.

MR. MARDEN—That trouble has not occurred to us to a great extent, and we can relieve with 50 pounds pressure quite as well as with 60 or 70. If you are carrying 50 or 40 pounds pressure you have only got that amount of pressure to overcome before your brakes are relieved. If you are carrying 50 pounds pressure, and it takes 10 pounds of it to apply your brakes, then you have only 40 pounds to overcome before the brakes are released. Now, if you are carrying 70 pounds pressure and reduce 10 pounds, you have then got 60 pounds pressure to overcome in order to release your brakes ; so that unless there is some other appliance connected with this whereby the 20 pounds of pressure is used independently of the 70 pounds, it seems to me that it would not be of any benefit.

MR. KIRBY—I am satisfied that there is knowledge enough in this convention now to edify us all on this subject of air-brake pressure, sliding of wheels, and so forth, if the gentlemen will only speak their experience. I know we will all go away from this meeting this afternoon knowing more than we did when we came in. I am very much of the opinion that Mr. Marden is, and I take it from this point : If the engineer cuts loose from a passenger train, setting the brakes with a maximum pressure of 70 pounds, and another engine couples on to that train with only 50 or 60, he cannot release those brakes. He must stop and pump up until he reaches the pressure at which the first engineer set the brakes. That, I think, is the experience of most all of us. So, as Mr. Marden says, I think it matters very little whether you set the brakes at

50 pounds or at 70 pounds pressure. You must obtain the same pressure to release them, and a little more.

MR. FORSYTH—It is just that little more that we call an extra pressure.

MR. MARDEN—I would like to ask Mr. Forsyth how that extra pressure is used. If it is shown on the gauge of the engineer that he is carrying 90 pounds, and that pressure is distributed through the pipes to the cars at 90 pounds, when he sets the brake, we will suppose that it takes 10 pounds. He is then reduced down to 80 pounds. Now he must use more than 80 pounds to release that. So I say, unless that extra 10 pounds is used in some indirect way it is not used to apply brakes; but after brakes are applied it is held in abeyance. It is then let into the pipes. I do not see why it should make any difference whether they carry 60 or 90 pounds.

MR. KIRBY—I would further say in this connection, that the trains having the most slid wheels under are trains that make the fewest stops. Now, that perhaps will be a conundrum. It seems to me from my experience that it is not so much the stopping that does the sliding and spoiling of wheels. The stopping is done so suddenly. With the use of an air-brake the trains are stopped in a very short distance, and I account for the fact that more sliding is done with trains that make the fewest stops in this way: The engineer does not maintain an equal pressure, and if he does not the valve is just like a balance; whichever way the pressure predominates, that way the valve will move, and if he has not pressure enough to control the valve, the valve will control him.

MR. McILWAIN—The question of slid wheels under passenger-cars is of considerable importance to us, and I took it up. I made some experiments and made some changes in our brake leverage, and I came to this conclusion and I put it into practice—to make all my levers, the live lever, the dead lever and the floating lever on all trucks alike—on all capacity car trucks, but making the difference, according to the weight of the car on the wheels, in the cylinder levers. We probably have seven or eight or nine different kinds of passenger-cars, and I make that many different sizes of cylinder levers. With that adjustment I made some experiments and found it was about right. Of course, I made the pressure to work at seventy pounds in the car auxiliary, so that the brake weight on the wheels was less than the car weight on the wheels. I found it worked first rate, and ever since, in every train in which we have the lever applied in that way we have no skidded wheels. In fact it has reduced the amount of skidded wheels on our trains about seventy-five per cent. I thought it was worth something to us, and we will continue it as fast as the cars come through the shop for repairs of that sort.

Mr. Blackall's motion was put and lost.

MR. LENTZ—I move that this subject be continued and referred to a new committee.

The motion was carried.

THE PRESIDENT—Is the Committee on Revising the Height of Miller Draw-bar ready to report?

The report of this committee was read by the Secretary, and is as follows:

REPORT ON STANDARD HEIGHT OF DRAW-BARS FOR PASSENGER CARS.

Your Committee on Revising the Height of Miller Draw-bar respectfully submit the following report:

We find, on investigating this question, that at the Convention, held in Chicago in June, 1869, thirty-six (36) inches was recommended as the standard height of draw-bars for passenger cars, and at the Convention, held in Richmond in June, 1871, the height was fixed at thirty-three (33) inches.

In order to ascertain what the practice is at the present time, your Committee issued a circular asking the following questions:

1. Do you use Miller draw-bars upon the cars run in your passenger equipment?

2. If yes, will you please state how many cars you have which are so equipped?

3. Also, please state what is the standard height of these draw-bars as adopted by you, measured from the level of the top of rail to the centre of the Miller draw-hook?

In answer to this circular, we received replies from one hundred roads, representing twelve thousand and seventy-nine (12,079) cars, equipped with the Miller draw-bar.

1 road,	representing	6	cars,	height of	draw-bar,	32	inches.
19 roads,	"	2,452	"	"	"	33	"
2 roads,	"	46	"	"	"	33½	"
26 roads,	"	4,387	"	"	"	34	"
5 roads,	"	1,195	"	"	"	34½	"
19 roads,	"	2,472	"	"	"	35	"
1 road,	"	310	"	"	"	35½	"
5 roads,	"	581	"	"	"	36	"
2 roads,	"	630	"	"	"	36½	"

An average height of 34¼ inches.

In view of the fact that some roads are using wheels larger in diameter than formerly, your Committee does not think it

advisable to recommend the standard of thirty-three (33) inches proposed at Richmond; nor do we approve of thirty-six (36) inches, as was proposed at Chicago.

As a compromise measure, and one that will meet the average height of draw-bars on cars now running, we recommend that the standard height of draw-bars for passenger cars be thirty-four and one-half (34½) inches from the level of the top of rail to the centre of the hook.

JNO. S. LENTZ,
ROB'T MCKENNA, } *Committee.*

MR. MARDEN—I move that the report be received and the recommendation adopted.

The motion was seconded by Mr. Adams.

MR. FORNEY—I think that ought to be referred to letter-ballot. The motion should be that the report be received and the recommendation be referred to letter-ballot.

MR. MARDEN—I will accept that if the seconder will agree to it.

MR. ADAMS—Yes; that is right.

The motion was carried.

THE PRESIDENT—The Committee to codify the Rules of Interchange comes next.

MR. FORNEY—I would say that this was referred to a sub-committee to report to the Executive Committee. The Executive Committee modified the report of the sub-committee, and it was disposed of this morning. There is nothing left to do but discharge the committee.

On motion, it was agreed that the committee should be discharged.

MR. MARDEN—Would my question be in order now? If so, I want to ask the Executive Committee why they excluded in their report the further experimenting with couplers of the Miller type?

THE PRESIDENT—I do not know that I can answer Mr. Marden's question. If some other member of the Executive Committee would answer him I would be obliged.

MR. ADAMS—I will endeavor to enlighten Mr. Marden somewhat on that subject. There are some things about that experimenting that the committee do not feel quite at liberty to divulge yet, and that are still in the hands of the committee. They only have reported progress, and I think they have a right to withhold just what they see fit to withhold in regard to the matter. I do not think any one can draw the inference that the draw-bar which Mr. Marden speaks of is entirely discarded. We do not say that. There are a number of others that are not mentioned, and yet it does not follow absolutely that they are thrown out of the race; so I do not see that there are any grounds or good reasons why they should insist on an explanation until the final winding up of the report of the committee. The matter is still in the hands of the Executive Committee, as I understand it.

MR. MARDEN—I only wish to say that this number of couplers were in the hands of the committee. Now, the committee say to us that they have no report to make in regard to the performance of these different draw-bars, and without giving any reasons whatever, and without giving any information in regard to any of the draw-bars, as to what they have done, excluded them in their report, virtually, because they only recommend for further trial six of them. They excluded five. Now, I think it would only have been justice to the whole number of those draw-bars, if the committee had not had sufficient evidence to warrant them in saying anything particular in favor of any of them, to have let the matter continue as it was for another year. It is not a question at all with me. We are interested simply to get something that shall do the work. Several roads are experimenting with couplers of the Miller type, and on our passenger cars we have had complete success with it. We want something that will be a complete success on freight cars, and I tell you candidly when it comes to the time for the adoption of any one draw-bar, if it be the Ames or any other type of draw-bar that this convention adopts, we shall adopt it. We are not prejudiced, neither are we selfish about the matter ; but I do think that in justice to all these, they all should have been continued, and I ask that, if it be possible, the whole number be continued, as recommended, for further trial during the coming year.

MR. ADAMS—I suppose Mr. Marden and all the rest are well aware, and it was so reported here before the Association, that there was a good deal of trouble about getting these couplers into use, as was proposed, by the different roads, and some of them have not been put into use at all. Now, there were certain reasons why the Executive Committee did not see fit to make a complete report or divulge what they were having under consideration, and I do not think that any member of the convention has a right, until that committee makes a final report, to crowd them for any of those reasons. The reasons are in the hands of the Executive Committee, and they propose to hold them until they get through with them. Now, when they get through and make their final report, if reasons are called for why certain ones were recommended before others, they probably will be prepared to give those reasons. It does not interfere with Mr. Marden or any other member going on and making all the experiments they please with these twelve buffers and with as many others as they choose to try, and when the time comes at the next convention, when these reports may be made, they can then ask for all the reasons they wish, and Mr. Marden and others can give their experience with all the buffers they have tried, if they wish. I think that the Executive Committee have a perfect right to withhold, and I do not think that they are infringing upon the privileges or rights of the Association by withholding the information that Mr. Marden presses us to divulge.

MR. MARDEN—I do not question their right to withhold it, but I do question the advisability, and perhaps their right, to reject anything, I

do not care what it is, that is put into their hands, without giving a reason for it; and, as I said before, if they had nothing to offer in favor of any of the draw-bars, they certainly should not have rejected any of them, which they partly have done. And that is the ground I take, that with the meagre information which they have, the matter should have rested just as it was. Now, I put the question, and I think I am perfectly right in doing so—if Mr. Adams had not been on the Executive Committee, and as he has used the Ames for so long a time, and that had been dropped from the report, and not been recommended for further use, would not Mr. Adams have wanted to know the reason why? He has used that thing and satisfied himself that there is some merit in it, and the possibility of its developing itself in such a way as to be used. I say the same thing for the Cowell. We have used it for a long time on the Fitchburg road, and other roads have used it. We have adopted it in this way as a vertical hook coupler, because we believe in it. We have been some time in getting it into a shape where it will stand the hard usage it gets on freight cars. In another year we may demonstrate that it will do something, and still we may not.

MR. RHODES—While listening to what Mr. Marden has said, I am still rather disposed, as a member of the Association, to support our Executive Committee. They have not made a final report on draw-bars yet, and we do not know what their methods are—how they are going to arrive at a solution of this question. They are not going to stop the investigation of the matter. The railroads are making and will continue to make an investigation of couplers regardless of whether the Association drop their investigation on certain couplers or not. When the Association passed the acts they did yesterday, I felt like asking some question as well, but I thought that would be hampering the Executive Committee. Do not judge them until they have made their report. If they make a report that will not stand public opinion, that will be something they will have to look after. It will not stop the better draw-bars from coming in. I still think that as an Association we do not want to judge our Executive Committee too hastily. They have their line of experiments which they intend to carry out, and I say, do not judge them until they have made their final report.

MR. MARDEN—Mr. Rhodes and the other members all well know that a report of the Executive Committee, or any vote of this Association, carries a great deal of weight with it with various roads, and while I do not judge the Executive Committee's action, I simply say that I think they ought not to have mentioned any one of the draw-bars until they were prepared to make a report. They say we can go right on and use them. That is very true. But the report of the Executive Committee has a great deal of weight, and our officers will say: Your Executive Committee has investigated this matter and does not consider those draw-bars worthy of any further attention; and I think that I should look at it in that light.

MR. BLACKALL—I would ask Mr. Marden if he understands that

the test of the Cowell coupler has been discontinued by the Executive Committee ?

MR. MARDEN—I understand that you recommend only seven of these draw-bars and leave the others out entirely.

MR. BLACKALL—We are continuing our tests.

MR. MARDEN—I beg to differ from you, and I call attention to the report of the committee, which says: We recommend for further trial these seven draw-bars, not mentioning at all the other five.

MR. GAREY—Our Executive Committee are men of good, staunch ability, and unquestionably know what they are about. But I may say I was much surprised this morning when I came to read their report in the daily papers, and was also much surprised to hear the comments of the public, so far as I could hear them. They say there is only one type of the hook coupler which they will recommend for further trial ; that is the Janney type. Now, while a large majority of all the passenger equipment of the country is equipped with the Miller, and has been so equipped for years, and has proved a success, I fail to see on what grounds they could exclude that type of coupler from further trial. I read that report over several times to see if I could not find some way out of the difficulty, but the more I read it the more I was convinced that the intention of the committee was to exclude the Miller type entirely.

MR. ADAMS—If the President will allow me to make a little further explanation, I would like to. I presume I would have felt just as Mr. Marden does, and as he says I should, if they had excluded the Ames. I do not blame him for feeling so, as he is so anxious for the Cowell ; but that has nothing to do with this question one way or the other. I appreciate Mr. Rhodes' remarks very much, because he is willing to put trust in the Executive Committee's actions. We claim to have been honest in all our reports, but we deemed it proper, and we do still, to withhold such portions of that report as we think best for the present, and when the time comes to make that report there will be reasons given for whatever we recommend. I claim that although you may draw inferences as you please—and people will draw inferences from anything they read —I deny that we excluded any. We have not excluded any from the twelve ; they are just as much at liberty to go on and experiment with them as not. I do not deny that we have withheld some knowledge that Mr. Marden asks for ; and they will have to be a little patient until they get that knowledge. Mr. Rhodes is making extended experiments on brakes. He is not going to divulge all his plans to the public until he is prepared to. We cannot blame him. If the members will be patient and wait, I think they will be satisfied with the reasons and with the report of the Executive Committee when they get it in full. I do not know of any better explanation that we can make than that. I am sorry Mr. Cloud and Mr. Wall are not here to assist in this matter, because they are far better talkers than any of us, and perhaps they could make it clearer than I have been able to. I have endeavored to do the best I can in defense of the Executive Committee.

MR. McILWAIN—I am very glad to hear that explanation from the Executive Committee, because my own feelings on that question were similar to Mr. Marden's as stated, although I didn't care to say so, and I think there are a great many more feeling the same way. But I think that properly closes it up. I am glad he has denied the allegation.

MR. MARDEN—I do not think the explanation of the Executive Committee has put it in any better light at all. The fact still remains that they have only mentioned seven draw-bars for further use. It does not satisfy me a particle.

MR. ADAMS—You must go on and use that and satisfy yourself.

MR. MARDEN—That does not make any difference, and you know it as well as I do.

MR. FORNEY—I am not a member of the Executive Committee, although most people think I am; but in the newspaper report this morning the language used by the Executive Committee—I believe it is printed correctly—is as follows: "We would recommend to the Association *as most worthy* of trial in sufficient numbers to demonstrate their ultimate worth." I do not think any interpretation of that language would mean to exclude the others entirely; it simply means these are the most worthy.

MR. MARDEN—I read the report quite carefully and I have studied the matter from the beginning, and I will say that even that is not satisfactory at all, and nothing would satisfy me ——

MR. ADAMS—Except the admission of the Cowell coupler.

MR. MARDEN—I beg to differ from you—except to have left the matter entirely alone if they could not have given sufficient evidence to show that the draw-bars were not worthy of further experimenting.

THE PRESIDENT—I am very sorry that Mr. Marden cannot be satisfied with the action of the Executive Committee, and I am very sorry that it has not been deemed expedient to divulge everything that was done in the session of the Executive Committee. I do not think it would be proper at this present time to divulge the action of the committee entirely. Perhaps I may be wrong, but it was the judgment of the committee, and I concur in it.

MR. KEELER—I made the motion yesterday to receive the report and adopt the recommendation. When I did so it was clear in my mind that the trial of the twelve couplers was to continue another year. Had I not thought so I should not have made the motion. I would suggest that if the couplers have not had a fair trial on the roads to which they have been assigned, that it would be a proper thing for the Executive Committee to assign them to other roads.

THE PRESIDENT—I would say that there are some of these couplers that have never been put on at all yet. We have given them all the chance we could. In explanation of that, I will say that the Dowling coupler was assigned to the Rock Island road. I did all I could myself to try to give them a chance to put it on. They wanted to put it on themselves. I said if they would send them to me I would put

them on right away. Up to this time I had a great deal of correspondence with their agent, urging him to get the couplers on after I had provided the cars for them at Columbus, Ohio, and to this date they haven't put on any. It is no fault of mine if they are not on. It was on account of some difficulty that they had in making the coupler conform to the recommendation of the Executive Committee—at least so that it would couple with the Janney, that being the oldest coupler of the kind. They were all the time experimenting to try to do that thing, and they had not got it satisfactory to themselves, and that was one reason, the agent explained to me, that he could not get it on.

MR. GAREY—Is it a fact, as has been stated, that some of those couplers recommended for further trial are not on trial at all ?

MR. ADAMS—It is a fact.

MR. GAREY—And that type in every case has been the Janney type ?

THE PRESIDENT—As I understand, it was the reverse type. They did not follow the recommendation of the Executive Committee at Buffalo, to make all couplers of a type so that they would couple together. What would be the good of putting on two hook couplers that would not couple together ?

MR. KEELER—In connection with the subject of further testing, I would suggest that the committee recommend the Cowell coupler to the Detroit, Lansing & Northern road for a test. They are about ready to try it and would like to try it.

THE PRESIDENT—Do you make that motion to instruct the Executive Committee to do that, Mr. Keeler ?

MR. KEELER—Yes, sir.

MR. McILWAIN—I second that motion.

The motion was carried.

MR. LENTZ—In reference to the Gifford, which is assigned to the Lehigh Valley road, I would say that up to the time that I left home the couplers had not been received, although the Gifford Coupler Company had been notified that they were ready to put them on on their receipt.

THE PRESIDENT—If there are no further remarks on this we will proceed to other business. I will call for the report of the Committee on Subjects to be Reported at the Next Annual Convention for Investigation and Discussion at the Succeeding Convention.

MR. BLACKALL—I am Chairman of the committee, and there have only been three subjects presented, and I move that the matter be referred to the Executive Committee. I can give what I have. There are only three.

The motion was carried.

THE PRESIDENT—The next thing in order will be the election of officers for the ensuing year.

The Secretary read the nominations for officers.

For President—B. K. Verbryck.

For Vice-President—William McWood, John W. Cloud, E. W. Grieves.

For Treasurer—John Kirby.

For Executive Members—F. D. Adams, L. Packard, E. B. Wall.

MR. DAVENPORT—I move that the Secretary be authorized to declare the ballot of the convention for the gentlemen named for officers.

Adopted.

MR. FORNEY—The Secretary announces that all the gentlemen whose names have been read are elected.

MR. BLACKALL—The subjects that I have received so far are as follows: "Standard Axle for a Sixty-pound Car"; another subject—"To Arrive at a System of Making our Standard Axle Uniform"; and a third subject—"Car Roofs."

THE PRESIDENT—To say that I am not proud of your confidence in me, shown by your re-electing me for another year as President of this Association, would not be true; but I think you all realize that I had no desire to be elected President of this Association in the first place. I have tried to do the best I could under the circumstances. I know my failings, and as I know that so many other members are much more qualified for the position of presiding officer of this Association than I am, I would have been very much pleased if you had put some other gentleman in my place. But as it is, I thank you for the confidence you have placed in me, and I will endeavor to do the best I can under the circumstances. If I should fail in any way you must attribute it not to any fault of mine, at least so far as the will is concerned, but it will be due to not knowing what I ought to know and therefore I ask your forbearance and am very much obliged to you for the compliment you have paid me. (Applause.)

THE PRESIDENT—I call for the report of the committee to present a place for the next annual meeting.

MR. BLACKALL—The committee unanimously select Thousand Islands, Alexandria Bay. We have the promise of first-class accommodations and fair rates.

MR. GAREY—I would like to call the attention of the gentlemen to the treatment that they received at Saratoga. Mr. Southgate, you all recollect, took splendid care of us. The day on which the convention met there was the opening of his house. Everything was new. The waiters were new. Everything had to be organized, and any one that recollects the treatment that we received there will want to see Mr. Southgate again. I understand that he keeps the House at Thousand Islands, and will be very glad to have you call and see him, and if he does not treat you well, you can blame me for it.

MR. McILWAIN—I would like to add an amendment to the report that Minneapolis or St. Paul be included. I would like to say in support

of that that we have not been west for four years. Our location for meetings has been in the east entirely. We should not ignore the west; it is a rising country, and Minneapolis is the centre of a large railroad system and is increasing. I think every time we go to new localities where we have not been before we draw new elements into the Association. It is a large place and the means of getting there are good.

MR. ADAMS—If anybody ought to complain of going to St. Paul or Minneapolis, I think I should. It would be farther for me than for any one else. But I am very anxious to go to Minneapolis or St. Paul. And another thing that ought to have a pretty strong hold on us, the ladies all want to go to Minneapolis. (Laughter.) I notice that they have been pulling wires all around and buttonholing all of the members and getting them to agree to vote that they will go to Minneapolis, and I think they have all agreed to go that way; so I do not think there is any kind of doubt at all but that Minneapolis will be the place. I should be surprised if it is not, and I hope that every member understands that when we are called upon to vote, we vote to go to St. Paul or Minneapolis, leaving it to the Committee of Arrangements to decide upon which place they will take. I want an opportunity to go there, and I never shall get there in creation unless I go with the Car-Builders' Convention. If I live another year I want to go there.

MR. MILLER—I would like to ask Mr. Adams if he took a vote of the ladies.

MR. ADAMS—The lady that buttonholed me told me confidentially that the ladies all wanted to go, and she said she had some fifty votes then, I believe, of the men.

THE PRESIDENT—Are any other places mentioned? If not, I will call for a vote on Minneapolis or St. Paul as an amendment to the report of the committee.

The motion to meet at Minneapolis or St. Paul was carried.

MR. ADAMS—There were not many that voted no. Those few the lady did not see, I am confident. I will say that it has been talked of in the Executive Committee at various times that it was thought advisable to empower the Executive Committee with authority to elect some one in place of any member that might fail from any cause to be able to attend to the duties of his office, and as it would require a change in the Constitution, I would give notice that we will present that as an amendment to the Constitution next year—to empower the Executive Committee to fill any vacancy that may occur in its membership from any cause.

MR. BRADY—I would like to know if the whole of the proceedings of this convention are going to be published, or only part.

MR. FORNEY—I suppose what Mr. Brady refers to is the discussion of the Rules of Interchange. Heretofore it has not been the custom to publish the discussions of the Rules of Interchange, but only the amended rules as finally adopted. It is a matter for the convention to determine whether they will have the whole discussion published or not. It involves considerable additional expense, and the finances of the Asso-

ciation are not in such a plethoric condition as to enable us to go very far. However, if it is the wish of the Association that they should be published, of course the Secretary will have it done.

MR. RHODES—I should think the discussions on these rules are very important parts of the rules, and that it will save the Executive Committee a great deal of trouble if they do publish them. The discussions explain the rules, and the motions that have been made and lost will speak for themselves. There will be no need to bring up a question which has come up before the Association and been lost. There will be no need of bringing up that question to the Executive Committee, and I should think that it is quite important that the discussions on the rules should be published. I think that a good deal of the misunderstanding that we have had of the rules in previous years is because the discussions have not been published. I rather hope they will be this year.

MR. BRADY—I move that the discussion of the rules be included in the annual report.

The motion was carried.

THE PRESIDENT—Is there any further business ?

MR. GAREY—The Executive Committee very properly excluded the report made on the standard draw-gear for non-automatic couplers, from the very fact that they did not comply with the Constitution and the rules. I would like to say a word in reference to that subject. You will notice on page 136 of the last annual report, figures 18, 19 and 20, that in Chicago there was adopted in 1879 a non-automatic draw-bar, giving all dimensions, including the attachments at the rear end of the car. Now all this committee could do was to recommend some mode of attaching the draw timbers to the draw sills or to the frame of the car. Now, as the committee have no facilities and no money to expend in making drawings—working detail drawings, showing what they would recommend, they did not recommend anything, but they presented a tracing showing the manner in which the work was done on one of the roads, which would obviate, if put in general practice, a great deal of trouble. I do not wish to have that tracing presented or anything of the kind, but only to show that the committee had no funds to work with.

The convention then adjourned.

LETTER BALLOTS.

In accordance with the resolutions on pages 48, 72 and 172 of the Twentieth Annual Report, and with the provisions of Article IX. of the Constitution, the Secretary sent the following circular and blank ballots to each member of the Association :

CIRCULAR RELATING TO LETTER-BALLOTS ON STANDARD DEAD-BLOCK BRAKE-SHOE, TREAD AND FLANGE OF WHEEL, AND HEIGHT OF MILLER DRAW-BAR.

NEW YORK, August 10, 1886.

To the Members of the Master Car-Builders' Association :

At the last Convention of the MASTER CAR-BUILDERS' ASSOCIATION, it was agreed to submit the following recommendations of the Committee on Standard Dead-blocks (numbered I. and II.), for decision by letter-ballot :

I.

DOUBLE DEAD-BLOCKS.

"That when double dead-blocks are used, that their vertical height and their width, measured crosswise to the track, be each 8 in., and their thickness, measured lengthwise to the track, be 6 in. ; that they each consist of a casting as represented by the drawing submitted with this report."

(*See Figs.* 1, 2 *and* 3, *page* 33.)

II.

BEAM FOR DOUBLE DEAD-BLOCKS.

"That when a beam, attached to the end-sill, is used for carrying the dead-blocks, that it be made 36 in. long, not less than 4 in. thick and 8 in. vertical depth."

(*See Figs.* 4 *and* 5, *page* 34.)

At the same meeting the following proposed standards were also submitted for decision by letter-ballot :

III.

"That the standard height of draw-bars for passenger cars be 34½ inches from the level of the top of rail to the centre of the hook."

IV.

TREAD AND FLANGE OF WHEEL.

(*See Fig.* 8, *page* 69.)

V.

CHRISTIE BRAKE-HEAD AND SHOE.

(*See Plate* VI.)

M. N. FORNEY, *Secretary*,
23 Murray Street, New York.

The following is a copy of the postal cards which were used for ballots:

LETTER-BALLOT OF THE MASTER CAR-BUILDERS' ASSOCIATION.

NEW YORK, August 10th, 1886.

SIR:—Please indicate by writing "Yes" or "No" after each of the following questions, whether you are, or are not, in favor of the adoption of the standards referred to by the following questions, and then sign your name below and remail the card to the Secretary. The votes will be counted on October 10th, and ballots not received before that date will be excluded. Members are reminded that they must vote either "Yes" or "No"—a qualified vote cannot be counted.

1. Are you in favor of the adoption, as a standard, of the dimensions and form of double dead-blocks described and illustrated under heading I. (see Figs. 1-3, page 33), of the accompanying circular? [Write "Yes" or "No" here.] ☞.....

2. Are you in favor of the adoption, as a standard, of the dimensions of beams for double dead-blocks described and illustrated under heading II. (see Figs. 4 and 5, page 34), of the accompanying circular? [Write "Yes" or "No" here.] ☞.....

3. Are you in favor of the adoption of 34½ inches from the level of the top of the rail to the centre of the hook, as the standard height for the draw-bars of passenger cars? [Write "Yes" or "No" here.] ☞.....

4. Are you in favor of the adoption, as a standard, of the form of tread and flange for car wheels represented by the engraving (see Fig. 8, page 69)? [Write "Yes" or "No" here.] ☞.....

5. Are you in favor of the adoption, as a standard, of the "Christie" brake shoe, represented by the engravings (see Plate VI.)? [Write "Yes" or "No" here.] ☞.....

[Sign your name here.].....

Number of votes to which member is entitled.....

VI.

STANDARD TRUCK FOR FREIGHT CARS.

On October 20 the following circular and blank ballot was sent to the members of the Association:

CIRCULAR RELATING TO LETTER-BALLOTS ON A STANDARD TRUCK FOR FREIGHT CARS OF 40,000 POUNDS CAPACITY.

NEW YORK, October 20, 1886.

To the Members of the Master Car-Builders' Association:

At the last Convention of the Master Car-Builders' Association, it was agreed to submit the question of the adoption, as a standard, of the plan of truck for freight cars of 40,000 lbs. capacity, which is represented by the engravings in Plates VII. and VIII., for decision by letter-ballot. You are therefore requested to indicate by writing "Yes" or "No" on the back of the enclosed postal card, whether you are or are not in favor of adopting these plans as standards. It is to be understood that the

adoption of this standard imposes no obligation on members to use it. It is considered desirable to agree upon some standard truck, so that those who have none may use the one adopted by the Association, rather than to introduce more new patterns, which add to the present confusion.

M. N. FORNEY, *Secretary*,
23 Murray Street, New York.

The following is a copy of the postal cards which were used for ballots :

LETTER-BALLOT OF THE MASTER CAR-BUILDERS' ASSOCIATION.

NEW YORK, October 20, 1886.

SIR—Please indicate by writing "Yes" or "No" hereafter, whether you are or are not in favor of the adoption of the plans, sent herewith, as standards for freight car trucks of 40,000 pounds capacity, and then sign your name below and remail the card to the Secretary. The votes will be counted on December 20th, and ballots not received before that date will be excluded. Members are reminded that they must vote either "Yes" or "No." A qualified qote cannot be counted.

[Write "Yes" or "No" here] ☞.....

[Sign your name here].....

Number of votes to which member is entitled.....

The following announcements of the results of the letter-ballots were sent out after the votes were counted :

October 15, 1886.

To the Members of the Master Car-Builders' Association :

ANNOUNCEMENT OF THE RESULTS OF LETTER-BALLOTS.

The following are the results of the voting by letter-ballot on the questions submitted to the members by a circular, dated August 10, 1886 :

On the first question—"Are you in favor of the adoption, as a standard, of the dimensions and form of double dead-blocks, described and illustrated under heading I., (see Figs. 1–3, page 33)?"—there were 381 affirmative and 119 negative votes cast. As two-thirds of all the votes cast are required for the adoption of a standard, and as the proposed "dimensions and form of double dead-blocks" received more than that proportion of affirmative votes, *they are now adopted as standards of the Master Car-Builders' Association.*

On the second question—"Are you in favor of the adoption, as a standard, of the dimensions of beams for double dead-blocks described and illustrated under heading II., (see Figs. 4 and 5, page 34)?"—there were 375 affirmative and 126 negative votes cast. The proposed "dimen-

sions of beams for double dead-blocks" *have, therefore, been adopted as standards.*

On the third question—"Are you in favor of the adoption of 34½ inches from the level of the top of the rail to the centre of the hook, as the standard height for the draw-bars of passenger cars?"—there were 246 affirmative and 276 negative votes cast. As the proposed height of draw-bars for passenger cars did not receive two-thirds of the votes cast, it is *not adopted as a standard.*

On the fourth question—"Are you in favor of the adoption, as a standard, of the form of tread and flange for car-wheels represented by the engraving under heading IV. (see Fig. 8, page 69)?"—there were 411 affirmative and 91 negative votes cast. The proposed form of tread and flange, therefore, *has been adopted as a standard.*

On the fifth question—"Are you in favor of the adoption, as a standard, of the 'Christie' brake-shoe, represented by the engravings under heading V. (see Plate VI.) of the circular?"—there were 369 affirmative and 130 negative votes cast. The "Christie" brake-shoe, therefore, *has been adopted as a standard.*

NEW YORK, December 24, 1886.

To the Members of the Master Car-Builders' Association:

ANNOUNCEMENT OF THE RESULT OF A LETTER-BALLOT.

In response to the circular, dated October 20, 1886, which was sent to the members of the Association, there were 243 votes cast in favor of the adoption as a standard of the plans for trucks of freight cars of 40,000 pounds capacity, submitted with the circular and 163 votes against their adoption. As two-thirds of all the votes cast are required for the adoption of standards, the proposed plans for trucks have not been adopted.

M. N. FORNEY, *Secretary.*

MINUTES OF MEETINGS OF THE EXECUTIVE COMMITTEE.

MINUTES OF MEETING OF THE EXECUTIVE COMMITTEE OF THE MASTER CAR-BUILDERS' ASSOCIATION, HELD IN THE ROOMS OF THE SECRETARY, NEW YORK, JULY 10, 1885, AT 1 P. M.

There were present Messrs. Cloud, Wilder, Wall, Adams, Lentz, Grieves and Blackall.

The minutes of the meetings held June 8 and 11 were read and adopted.

The Secretary presented the Auditing Committee's report, which, he said, through an oversight, was not presented at the

last convention. As it was signed by one member of the committee only, the Secretary was instructed to forward it to the other members for their signatures.

Mr. Wall made a verbal report for the Sub-Committee on Car Couplers, appointed at Fort Monroe, and submitted the following resolutions, which, after full discussion, were adopted:

"That a notice be published in all the railroad papers of the country, that a public trial would be made at Buffalo, N. Y., Tuesday, September 15, of the various forms of automatic freight car couplers; that each party desiring to be represented at this trial should furnish two cars, equipped at both ends with the coupler to be tested; that full drawings and specifications, together with letters-patent, and any opinions on the device that may have been given by the Eastern or Western Railroad Association; also statements of the cost of equipping a car with the device and the details ready for service, and the numbers and initials of cars already in service.

"All couplers submitted for trial to couple with the link and pin couplers with equal safety as the latter will couple with one another.

"The Executive Committee will select from the couplers tested a certain number, which they will recommend for trial in service, and watch the behavior of them until one month prior to the meeting of the next convention, when they will prepare a report for the next annual meeting of the Association of the couplers tested in actual service."

Mr. Wilder moved that Mr. Wall and Mr. Forney be appointed a committee to put the resolution in proper form for publication. Mr. Wilder's resolution was adopted.

Mr. Lentz moved that a clause be inserted, saying that the Railroad Commissioners of the various States will be invited to be present at the trial. Adopted.

The following circular was issued, and was published in the railroad papers, in accordance with Mr. Wall's resolution, which was amended and revised by the committee appointed to perform that duty:

MASTER CAR BUILDERS' ASSOCIATION.

ANNOUNCEMENT OF TRIAL OF AUTOMATIC CAR COUPLERS BY THE EXECUTIVE COMMITTEE.

NEW YORK, August 1, 1885.

The Executive Committee of the Master Car-Builders' Association, acting in accordance with the general instructions given by the Association at the last convention, will make a public trial of Automatic Freight Car Couplers at Buffalo, N. Y., on Tuesday, September 15, 1885.

The Executive Committee will be guided by the results of their trial in recommending several forms of couplers to the railroad companies for further test in actual service. They will watch the behavior of those selected couplers until one month prior to the next convention of the Association, when they will prepare a report, and may recommend for universal adoption one or more different forms of Automatic Freight Car Couplers.

All parties desirous of presenting Freight Car Couplers to the consideration of the Master Car-Builders' Association are invited to participate in this trial.

The following requirements must be complied with :

The couplers must be attached to each end of two freight cars—preferably box cars—both cars must be forwarded, freight prepaid, to J. S. Hammond, Agent, New York, Lake Erie & Western Railroad, Buffalo, N. Y. Any additional charges for switching, etc., will be charged against the cars before they are billed home, and should be paid by the consignee or party interested in the device. Full drawings and specifications, together with letters-patent, and any opinions on the device that may have been given by the Eastern or Western Railroad Association, or by the Courts, and also a statement of the numbers and initials of cars equipped with the coupler and already in service, must be forwarded to the Executive Committee of the Master Car-Builders' Association, care of M. N. Forney, Secretary, 71 Broadway, New York, prior to September 15. All cars intended for this trial should be on hand in Buffalo, by Saturday, September 12, so that the committee can have a full list of them.

The committee will not consider or investigate the merits of couplers represented only by models, drawings or other descriptions. An imperative condition of the trial will be that couplers submitted to the committee *must be applied to two cars*, so that they can be tested at the time and place named.

The Executive Committee is not prepared to assist inventors or owners of patents on car couplers in procuring cars to be equipped and delivered at Buffalo ready for trial. Negotiations of this character must be conducted directly between the owners of the couplers and the railroad companies. It will also be necessary for parties furnishing cars

for this trial to arrange direct with the railroad companies for their return.

Notice of intention to take part in the trial, giving the numbers and initials of the two cars that will be forwarded, should be addressed to Edwd. B. Wall, Columbus, Ohio, or to M. N. Forney, 71 Broadway, New York, who will also answer inquiries with reference to the proposed trials.

Railroad Commissioners of the various States will be invited to be present at this trial.

By order of the Executive Committee.

M. N. FORNEY, *Secretary.*

Mr. Wall moved that two committees, composed of three members each, be appointed, one committee to make arrangements for receiving the cars, and for a place, and for the requisite facilities for making the tests; the other committee to draw up specifications for the conduct of the tests.

Mr. Wall's resolution was adopted, and the Chairman appointed Messrs. Wilder, Kirby and Lentz as the first committee, and Messrs. Cloud, Wilder and Blackall as the second.

Mr. Wilder moved that the Chairman and Secretary be instructed to notify the members of their appointment and duties. Adopted.

On motion of Mr. Wall, it was agreed that a Committee on Correspondence, relating to the tests of couplers, be appointed. The Chairman appointed Messrs. Wall and Forney as this committee.

The Secretary presented for the approval of the Executive Committee, a printed abstract of the discussion at the last convention on a standard form for the treads and flanges of wheels —this abstract to be sent out with the letter-ballot relating to that subject. The Secretary was directed to send out a printed proof of this discussion to each member of the Executive Committee for his approval.

A letter from J. H. Raymond, which was referred to the Executive Committee at the last convention, in which he asked to be allowed to withdraw his resignation, was presented for the consideration of the committee. On motion of Mr. Wilder, it was agreed to allow Mr. Raymond to withdraw his letter of resignation.

Mr. Wilder moved that the Christie brake-head for a loop hanger be represented in the drawing of the proposed standard. Adopted.

On motion of Mr. Cloud, the Secretary was authorized to get a drawing from Mr. Adams of the form of Christie brake-shoe used on the Boston & Albany Railroad, and that the Secretary in making a drawing for the proposed standard shall, in all essential particulars relating to the fitting of the head to the shoe, follow the Boston & Albany practice.

On motion of Mr. Wall, the Secretary was further instructed to consult with Mr. Buchanan, of the New York Central & Hudson River Railroad, in relation to the standard drawing of the Christie brake-shoe; and that the Secretary be given discretion in making the drawing, subject to the instructions of the Executive Committee, and the Association.

The following resolution, which was adopted at the last convention, was read:

"*Resolved*, That the Executive Committee shall present at the next annual meeting, a certificate of the rules for interchange of cars, embodying such amendments thereto as may be presented during the year and adopted by the committee."

The resolution was referred to the meeting of the Executive Committee to be held in Buffalo, on September 14.

Mr. Adams called up the matter of trap-doors in the roofs of cars, and the proposed letter to the Railroad Commissioners, on which action was postponed to the Buffalo meeting.

The meeting was then adjourned.

M. N. FORNEY, *Secretary.*

MINUTES OF A MEETING OF THE EXECUTIVE COMMITTEE OF THE MASTER CAR-BUILDERS' ASSOCIATION, HELD AT THE TIFFT HOUSE, BUFFALO, N. Y., SEPTEMBER 14, 1885, at 8 P. M.

There were present Messrs. Verbryck, Cloud, Wall, Adams, Lentz, Grieves, Wilder and Blackall.

On motion of Mr. Wilder, Mr. J. H. Bailey was elected Secretary of the meeting.

The minutes of the meeting held July 10, 1885, were read and adopted.

On motion of Mr. Wilder, the committee proceeded to the discussion of the car-coupler question. Adopted.

Mr. Wilder, Chairman of the Committee of Arrangements, made a verbal report as follows: That he had made complete arrangements to have trial take place at Hamburg Street Yards of the New York, Lake Erie & Western Railroad. That a detail of police would be present to enforce order, and that ropes would be stretched to enable each member of the committee to see the tests.

Mr. Cloud, Chairman of the Committee on Tests, submitted the following report to the Executive Committee:

Your committee appointed to consider and devise a plan for testing the automatic car-couplers at Buffalo, September 15, would report as follows, and recommend the plan hereinafter outlined:

The cars equipped with couplers for trial will be found standing in pairs on a straight piece of track, and they will be referred to herein as equipped with couplers "A," "B," "C," "D," etc., in the order which they may happen to be. The shifter used will have a car with old style of link-pin coupler of standard height (33 inches) coupled ahead of it.

First Test—The cars coupled to shifter will be coupled to the car equipped with coupler "A," noting comparative safety in doing so; also noting whether they can be uncoupled without going between the cars.

Second Test—The two cars with coupler "A" will have the contiguous couplers set so as not to couple, and cars will be run together at ordinary speed of shifting.

Third Test—Couple the two cars equipped with coupler "A," both at the ordinary speed used in hand coupling, and at such greater speed as will fairly represent the blows frequently received by cars in yard shifting. Try uncoupling after each case. Cars with coupler "A" will then be thrown out on a siding, and couplers "B," "C," etc., proceeded with in like manner.

In the above tests the couplers will be tested as presented, and the promoters of any couplers which employ a loose link shall furnish the link to be used, after which the standard, 10½-inch link (inside) shall be tried in each of said couplers.

In the meantime, and as cars are thrown on the siding, the end of one car contiguous to the other car of each pair will be blocked up, so as to raise the centre of coupler 3 inches, and test No. 3 will be repeated subsequently on a track having twenty degrees curvature (as nearly as may be found convenient), and with the cars in this position; also with the blocking removed, so as to lower the coupler to its normal position, and in each case the standard 10½-inch link will be tried after completing tests with the link presented, unless previously found to be unnecessary. Your committee further recommends that efficient police regulations be made to expedite the tests, and to avoid personal injuries, and that only

the representatives of each coupler be present at the cars when it is tested, in addition to the Railroad Commissioners and others invited.

For the committee,

JOHN W. CLOUD, *Secretary.*

After general discussion the report was adopted.

Mr. Cloud moved that Mr. Wilder be appointed Chairman of committee to manipulate the engine and cars during the tests, and that he have power to appoint two other members of the committee to assist him. Adopted.

Mr. Wilder named as his associates Messrs. Cloud and Lentz.

Mr. Blackall moved that the trial of automatic car couplers take place at the Hamburg Street Yard, New York, Lake Erie & Western Railroad, near the rolling mill, First Ward, on September 15, 1885, commencing at 1 P. M., and continue to 5 P. M., and to be continued the next day at 9 A. M. Adopted.

Mr. Cloud moved that Mr. Wall be appointed a committee of one to prepare descriptive notes of each form of coupler tested, and report on their applicability to the general forms of cars now in service. Adopted.

Mr. Wall moved that the Committee on Correspondence be continued, and that they report at the next regular meeting of the Executive Committee. Adopted.

Mr. Wilder moved that the car coupler question be dispensed with for this meeting. Adopted.

Mr. Wall made an explanation in regard to the Auditing Committee's report, and moved that the report made by the two members of the committee be accepted and filed. Adopted.

Mr. Wall offered the following resolution: That a committee, consisting of Messrs. Soule, Adams and Wood, be appointed to codify the Rules of Interchange, changing their wording, but not their sense, where their construction can be improved. That they be notified by the Secretary of their appointment and duties, with instructions to report to the Executive Committee prior to April 1, 1886. The Executive Committee also desire that, if any changes in sense may suggest themselves, or new rules that could be advantageously added occur to the Special Committee, they make a special report on the subject; which, after general discussion among the members, was adopted.

Mr. Cloud offered the following resolution: That the Secretary be instructed to issue the following circular in interpretation of Rule 9—Rules for Interchange of Cars.

At a meeting held in Buffalo, September 14, 1885, the Executive Committee authorized the following as the correct interpretation of Rule 9 of Interchange Rules :

Boring and fitting wheels, each 50 cents is a proper charge for every wheel used in the repairs contemplated by this rule.

Drawing and replacing per axle, 50 cents is a proper charge for every axle drawn from a truck for the repairs contemplated by this rule, whether the same axle or another is put back.

Turning axles, each 40 cents is a proper charge only when a new axle is used.

The form of bill given below may be substituted for that given in Rule 10 by any parties desiring to do so, as it embodies all the data of old bill form and is extended to better adapt it to new Rule 9, and the Executive Committee will recommend the adoption of the new form of bill at the next annual revision of the rules :

PENNSYLVANIA RAILROAD COMPANY.

....., 188.....

To PENNSYLVANIA RAILROAD COMPANY, *Dr.*

Per..... Superintendent..... Division.

For use of..... Treasurer P. R. R.

For Wheels and Axles used under.....*Cars.* *Month of*..... 188

DATE	STATION	CAR			WHEELS REMOVED				Shop Marks on Wheels and Axles	MATERIALS USED				NET CH'RGE	LABOR PERFORMED			TOTAL NET CH'RGE
		Initial	Class	Number	Maker	Date C'st	Number	CAUSE OF REMOVAL		AXLES		Wheels			BORING AND FITTING	DRAWING AND REPL'CING	TURNING AXLE	
										New	2d Hnd	New	2d Hnd					

After a general discussion this resolution was seconded by Mr. Blackall, and adopted.

Mr. Wall handed to the committee, for their consideration, the correspondence that had passed between Mr. Robert McKenna, of the Delaware, Lackawanna and Western Railroad, and Mr. George C. Bradbury, General Manager Peoria, Decatur & Evansville Railway.

A motion of Mr. Cloud, that the Secretary be instructed to reply to the McKenna correspondence that the Executive Committee cannot officially take action on the question in dispute, but that, if asked, the members of the committee would give an individual opinion, was adopted.

Mr. Adams moved that the Secretary be instructed to print the standards of the Master Car-Builders' Association separately, with a complete index, for distribution when called for. Adopted.

Mr. McWood arrived at this point of the proceedings.

Mr. Cloud moved that the Secretary be instructed to prepare, with the assistance of the Committee on Trap Doors, an answer to the communication of the Railroad Commissioners of the State of New York. Adopted.

Mr. Wall made the following motion: That the President select two members of the committee, besides himself, to appoint the personnel of the committee upon the list of subjects for discussion at the meeting to be held in June, 1886, which, after general discussion, was adopted.

The meeting then adjourned to meet again at 8 P. M., September 15, 1885.

JAMES H. BAILEY,
Secretary pro tem.

The committee met at 8 P. M., September 15, 1885.

Present—Messrs. Verbryck, Adams, Kirby, McWood, Blackall, Wilder, Cloud, Lentz and Wall.

A general discussion followed in reference to the resolution of Mr. Wall, "That the President select two members of the committee, besides himself, to appoint the personnel of the committee for 1886."

Mr. Blackall moved that Mr. Wall's resolution be reconsidered, and that it be struck out. Adopted.

The President, Mr. Verbryck, made a statement and requested the assistance of the committee to help him make up the committees.

Mr. Cloud moved that the following clause be struck out of the report of the Committee on Tests, commencing at the word, "also with the blocking removed, so as to lower the coupler to its normal condition." Adopted.

Mr. Wilder moved that Mr. Wall be appointed Chairman of the committee to furnish badges for the committee during the tests, and that Mr. Wall be instructed to deliver the same to those who are entitled to them. Adopted.

Mr. Lentz offered the following resolution:

Resolved, That the Committee on Revision of Rules be requested to prepare a code of rules governing the interchange of passenger cars, and submit the same to the Executive Committee prior to the next annual convention.

After a general discussion this resolution was defeated.

Mr. Lentz moved that, in printing the standards of the Miller Platform, a foot-note be added, as follows: "That the standard of 33 inches has given place to the common use of 35 inches, and that this subject will be considered at the next annual convention." Adopted.

Mr. Cloud moved that the President add this to the list of subjects, and that a committee be appointed to consider the same. Adopted.

The meeting was then adjourned to meet at the call of the President.

JAMES H. BAILEY,
Secretary pro tem.

MINUTES OF A MEETING OF THE EXECUTIVE COMMITTEE OF MASTER CAR-BUILDERS' ASSOCIATION, HELD AT THE TIFFT HOUSE IN BUFFALO, N. Y., SEPTEMBER 17, 1885, 6 O'CLOCK P. M.

Meeting called to order by President B. K. Verbryck, at 6 P. M., with the following members present: Messrs. Kirby,

Blackall, Wall, Cloud, Grieves, Lentz, Wilder, Adams, and the President, and also, by invitation, Mr. Leander Garey, Mr. McPherson, Commissioner of Railroads, and Mr. Ransom, Deputy Commissioner of Michigan, and Mr. Coffin, Commissioner from Iowa.

Communication from Mr. Angus Sinclair, editor of *National Car-Builder*, asking permission to be present at the meeting, was read.

Moved by Mr. Kirby that reporters be not admitted. Motion carried.

Mr. Bailey, of the *Railroad Gazette*, who had been acting as temporary Secretary, withdrew, and Mr. Edward B. Wall was appointed Secretary *pro tem.*

Mr. Wall, as committee to take descriptions, etc., of the various couplers tested, submitted a tabulated statement showing the couplers classified as follows, together with results:

CLASSIFICATION OF COUPLERS.

Class "A."—Loose links.
Subdivision 1. Pin supporters.
Subdivision 2. Catches or dogs substituted for pins.

Class "B."—Fixed links.

Class "C."—Vertical planes.
Subdivision 1. Lock effected by gravity.
Subdivision 2. Lock effected by spring.
Subdivision 3. Draw-head guided by boot, as in the Miller.

Class "D."—Loose coupling bars.

Class "E."—Hooks rotating vertically.

Class "M."—Miscellaneous.

The question of the best manner of considering the results of the test taken up and discussed. After the different members had expressed their views in a general and informal discussion, in which the Railroad Commissioners and Mr. Garey were invited to take part, it was moved by Mr. Wilder that Classes "D," "E" and Miscellaneous be stricken off as not necessary to take under

further consideration. Motion carried. These classes contained the following couplers:

Class "D." { Fitzgerald & Van Dorn. / La Roux & Van Aarle. / Murphy.

Class "E." { Hilliard. / Meadows. / Morgan.

Class "M." { Barnes. / Emmett. / Williams.

Moved by Mr. Wilder that the Bird coupler be dropped from the list for further consideration. Motion carried.

Moved by Mr. Wilder that the Brown & Curry be dropped from the list. Motion carried.

Moved by Mr. Cloud that the Smillie be stricken out. Motion carried.

Mr. Adams requested the privilege of leaving, which was granted by the President.

Moved by Mr. Wilder that the Whitman be stricken out. Motion carried.

Moved by Mr. Wilder that the Lancaster be stricken out. Motion carried.

Moved by Mr. Cloud that the McCree be stricken out. Motion carried.

Moved by Mr. Cloud that the Payne be stricken out. Motion carried.

Moved by Mr. Cloud that the Stanford be stricken out. Motion carried.

Moved by Mr. Cloud that the Boston be stricken out. Motion carried.

Moved by Mr. Cloud that the Hill be stricken out. Motion carried.

Moved by Mr. Cloud that the Hitchcock be stricken out. Motion carried.

Moved by Mr. Wall that the Eccentric be stricken out. Motion carried.

Moved by Mr. Wall that the Eureka be stricken out. Motion carried.

Moved by Mr. Wilder that the vote on the Eureka be reconsidered. Motion carried.

The Secretary was requested to prepare and post a list of the remaining couplers. This being done, the remaining couplers were taken up and discussed separately. They were as follows: Eureka, McKeen, Perry, Archer, Curtis & Wood, Gifford, Kiely, Marks, Union, United States, Ames, Dowling, Joo, Thurmond, Hein, Janney, Muller, Titus & Bossinger, Wilson-Walker and Cowell.

Moved by Mr. Cloud that the Union be stricken out. Motion carried.

Moved by Mr. Cloud that the Joo be stricken out. Motion carried.

Moved by Mr. Wilder that the Muller be stricken out. Motion carried.

Moved by Mr. Cloud that the committee go over the list and vote on them in the order on the list, and that any coupler that does not receive two sustaining votes, be stricken out. Motion carried.

Moved by Mr. Wilder that the Curtis & Wood be stricken out. Motion carried.

Moved by Mr. Wilder that the Kiely be stricken out. Motion carried.

Moved by Mr. Wilder that the Wilson-Walker be stricken out. Motion carried.

Moved by Mr. Blackall that the couplers still on the list be allowed to stand for trial. Motion lost.

Moved by Mr. Cloud that the committee take up Subdivision 1, Class "A" (three couplers), and that each member present be requested to vote for two of them by written ballot, those receiving the most votes to be retained. Motion carried.

The committee voted upon the McKeen, Perry and Eureka with the following result: McKeen 5, Perry 8, Eureka 3. The Eureka stricken from the list.

Moved by Mr. Cloud that a vote in the same way be taken for three couplers out of the four (Archer, Gifford, Marks and United States), to be retained on the list. Motion carried.

Result of vote as follows: Archer 8, Gifford 8, Marks 7, United States, 1. United States coupler was stricken from the list.

Moved by Mr. Blackall that the number now selected stand. Motion carried.

This leaves the following: Class "A1," McKeen, Perry; Class "A2," Archer, Gifford, Marks; Class "B," Ames; Class "C1," Dowling, Thurmond; Class "C2," Hein, Janney; Class "C3," Titus & Bossinger, Cowell.

Moved by Mr. Cloud that a committee be appointed to arrange the complete details of keeping the record of twelve couplers on ten cars each, and report to the Executive Committee prior to May 1, 1886. Motion carried, and the President appointed Messrs. Lentz, Adams and Secretary Forney as the committee.

Moved by Mr. Cloud that the Committee on Correspondence be retained and be requested to reply to the parties who have sent couplers for trial, stating whether coupler will be considered further, and returning them the papers that the committee are through with. Motion carried.

Moved by Mr. Wall that the Secretary of the Association be requested to submit resolutions at the next meeting of the Association, thanking the Erie Railroad and their Superintendent of Motive Power, Mr. F. M. Wilder, for assistance rendered in making the tests, the use of yard room, power, trainmen, etc., and everything necessary for the work. Motion carried.

Moved by Mr. Cloud that the Executive Committee express their thanks to Mr. F. M. Wilder for his assistance and work in making the tests. Motion carried.

Moved by Mr. Wall that the committee give the press the names of the couplers that have been approved to be put on for probation and subjected for further tests in actual service, and any communications from the owners of couplers selected to be addressed to Mr. M. N. Forney, Secretary of the Association, 71 Broadway, N. Y. Motion carried.

Moved by Mr. Wall that the committee who are to arrange for further tests be instructed to advise the owners of the Dowling, Thurmond and Hein, if possible to arrange their couplers to couple with the Janney. Motion carried.

Moved by Mr. Wilder that the thanks of the committee be extended to Mr. S. H. Harrington and W. B. Waggoner, and also to Messrs. Taylor and Randolph, for assistance rendered during the making of the tests. Motion carried.

Moved by Mr. Wall that a committee of three, including the Secretary, be appointed to compile the results of the tests. Motion carried, and Mr. Wall, Mr. Cloud and Mr. Forney appointed as the committee.

Moved by Mr. Kirby that a vote of thanks be given to Messrs. Cloud and Wall, for services rendered in making the tests. Motion carried.

Moved by Mr. Kirby that the Executive Committee return thanks to the Railroad Commissioners who have spent so much time in our company during the tests of car couplers. Motion carried, and responded to by one of the Commissioners present.

Moved by Mr. Wall that the thanks of the Executive Committee be tendered Mr. Bailey, for assistance rendered the committee, and that they will be glad to consider his remuneration at the proper time. Motion carried.

Moved by Mr. Wall that the Secretary be instructed to print copies of the minutes of the meeting held on September 17, copies to be sent to each member of the Executive Committee, and that no more copies be printed than there are members. Motion carried.

Moved by Mr. Wall that the Executive Committee adjourn, to meet the second Friday in November. Motion carried and the committee adjourned.

EDWARD B. WALL,
Secretary pro tem.

MINUTES OF MEETING OF THE EXECUTIVE COMMITTEE, HELD IN THE ROOMS OF THE SECRETARY, NEW YORK, NOVEMBER 13, 1885.

There were present Messrs. McWood, Grieves, Blackall, Adams, Cloud, Lentz, Wall and Wilder.

The minutes of the last two meetings were adopted.

Appropriations were made for the following expenditures by the Secretary:

Copying early reports	$7 80
Amount paid R. W. Ryan for short-hand report	100 00
Express charges	2 25
Engraving of brake-shoe	3 00
Circulars	12 00
Stationery	2 25
Engraving	12 48
Balance R. W. Ryan's bill for short-hand report	63 77
Postage	5 00
Stationery, letter file	1 25
Postage	10 00
Duties on Journal of the Iron and Steel Institute	35
Circulars	15 75
Postage	6 50
Express charges	25
Circulars	8 00
Printing history and early reports	339 37
Stationery, letter copying-book and stamp	1 40
Postage	10 50
Postage	7 50
	$609 42

The Secretary was also authorized to pay the bill of the *Railroad Gazette* of $200, for office rent to October 8, 1885, and sundry other items, amounting to $47.14 additional.

The Secretary read a letter, dated November 11, 1885, from A. R. Tinkham, Treasurer U. S. Car Coupler Company, containing a complaint that injustice had been done them at the Buffalo meeting. Mr. Wilder offered the following resolution: "That, as the U. S. Car Coupler Company have stated that they have been informed that certain action has been taken in regard to car couplers at the meetings held at Buffalo September 15–17, and as no such action was so taken, that the Secretary be directed to advise the U. S. Car Coupler Company to that effect, and that

they were not unjustly dealt with, as supposed by them, and that the committee were governed in their action by no such reasons as stated." The resolution was adopted.

On motion of Mr. Cloud, the other correspondence in relation to couplers received by the Secretary was referred to the Committee on Correspondence appointed at the Buffalo meeting.

Mr. Cloud then made a verbal report of the sub-committee appointed to arrange for further tests of couplers, and stated that the committee met and instructed the Secretary to correspond with the owners of the patents of the twelve couplers selected for further trial, and ask them whether they would each furnish couplers for ten cars free of cost. The committee also assigned the twelve couplers to the following roads for trial:

Ames,	to the	New York, Lake Erie & Western.
Archer,	"	Lehigh Valley.
Cowell,	"	Pennsylvania.
Dowling,	"	Chicago, Rock Island & Pacific.
Gifford,	"	Lehigh Valley.
Hein,	"	Delaware & Hudson Canal Co.
Janney,	"	Grand Trunk.
Marks,	"	New York, Lake Erie & Western.
McKeen,	"	Grand Trunk.
Perry,	"	Chicago, Burlington & Quincy.
Thurmond,	"	Pennsylvania.

Titus & Bossinger, to the Baltimore & Ohio.

Mr. Cloud then read the copy for the following circular, containing instructions for keeping a record of the performance of the couplers to be tested, which the sub-committee proposed to issue to the members of the Association:

TESTS OF AUTOMATIC CAR COUPLERS.

The Executive Committee of the Master Car-Builders' Association held a public trial of automatic car couplers at Buffalo last September, and they selected twelve of the number submitted to be put in service, to the extent of ten cars each, during the coming winter. A sub-committee was then appointed to arrange the details of these trials in service, and this committee is now perfecting arrangements to have ten line cars, which pass over trunk lines, equipped with each of the twelve couplers selected, and they hope to have them all in service by December 1st.

Each car equipped with these trial couplers will have the following stenciled plainly on each side of the car near one end :

"M. C. B. test.....coupler"

(the name of the coupler on each car being used in the space here left blank), and when the couplers are all in service an additional list will be issued, giving specifically the numbering and lettering on each car equipped with each coupler. In the meantime the stenciling placed upon the cars will serve to identify them. It is desired that these couplers be kept up and remain in active service until May 1, 1886, and a full and detailed report of the cost of all repairs, as well as of the working, or the failure to work safely, of these couplers will be looked for from all members of the Association who are connected with any railroads over which any of these couplers may pass up to that date.

Members of the Association are earnestly requested to see that all car inspectors and foremen of repair shops, as well as trainmen, on the lines with which they are connected, have proper instructions in this matter, and that reports should be made at such a date as will enable members to forward their reports to the Secretary in New York not later than May 10, 1886.

By placing the couplers for trial on line cars, it is thought that reports may be had from the same source on a number of different couplers, and in order to make the style of such report more uniform and easy for tabulation, we give the points which it is especially desired to have information upon while the cars are on your line :

1st. The nature and cost of repairs to couplers on each car receiving such repairs, by car number and name of coupler.

2d. State whether there has been any failure of any coupler to couple automatically with its own kind, specifying what couplers have so failed and in how many instances and the cause.

3d. State whether any of the couplers have automatically uncoupled when in service on your line, specifying what couplers have so behaved, with the number of such occurrences for each coupler, and with cause and circumstances.

4th. Give opinion of trainmen as to the comparative safety in coupling and uncoupling each style of coupler which has passed over your line when coupled with one of its own kind.

5th. Give opinion of your trainmen as to the comparative safety or danger involved in coupling each of the couplers which have passed over your line with the ordinary draw-head, as compared to coupling two ordinary draw-heads together.

6th. Give any further information of importance on points not included in the foregoing, which may have been noticed with regard to any of the couplers which have passed over your line.

On motion of Mr. Wilder, the circular was ordered to be printed and issued.

The Secretary then stated that he had corresponded with the owners of the patents of the twelve selected couplers, and that they had all agreed to furnish their couplers for further trial free of cost, and that the companies to which the Ames, Archer, Cowell, Dowling, Gifford, Marks, Perry and Thurmond had been assigned had agreed to apply and test them. Arrangements had not yet been completed for testing the Hein, Janney, McKeen and Titus & Bossinger couplers.

The Secretary then read a letter from the Secretary of the Franklin Institute, asking for copies of the annual reports of the Association for the library of the Institute. Mr. Wall moved that the Secretary be instructed to furnish copies of the annual reports of the Association to all public libraries that apply for them. The motion was approved.

The Secretary read a letter received from Mr. Coombs, Superintendent of the Knox & Lincoln Railroad, asking "whether a railroad company is liable under the rules governing the interchange for freight cars for loss by fire of foreign cars while standing at a station, when no negligence could be attributed to the company, and if liable whether or not the company should have the benefit of any insurance there might be on such cars?"

On motion of Mr. Adams the following resolution was adopted:

"In the opinion of the Executive Committee any railroad company is responsible for the return of cars in as good order as received, or its equivalent."

On motion of Mr. Wall the correspondence of the U. S. Coupler Company was referred to the Committee on Correspondence.

The Committee then adjourned to meet on the second Friday in January, unless it is otherwise provided.

M. N. FORNEY,
Secretary.

MINUTES OF MEETING OF THE EXECUTIVE COMMITTEE, HELD IN THE ROOMS OF THE SECRETARY, NEW YORK, FEBRUARY 12, 1886.

There were present Messrs. Cloud, Blackall, Lentz, Wilder, Grieves, and Adams. On the invitation of Mr. Blackall and the rest of the committee, Mr. Rogers, Railroad Commissioner of the State of New York, was also present at the meeting. Mr. Cloud was called to the Chair. He requested the Secretary to state the object of the meeting. The Secretary said that the meeting was called at the request of the President of the Association, "to consult as to what further measures should be adopted to hurry along the tests of car couplers." It was then proposed that each member state what progress has been made in applying the couplers to be tested on their roads.

Mr. Grieves said that the Hein coupler had not been applied to their cars, because it would not take the link used on the Baltimore & Ohio Railroad.

Mr. Lentz said that arrangements have been made on the Lehigh Valley Railroad to apply the Gifford and the Archer couplers, but that he had not yet received either of them.

Mr. Cloud said that the Cowell couplers were received on the Pennsylvania Railroad on the 1st of February, but had not yet been applied, and that one-half of the Thurmond couplers have been received.

The Secretary was instructed to write to Mr. Barr, and to ask him to select ten cars, equipped with the Janney coupler, and have them marked for the tests.

The Secretary was also instructed to employ a stenographer to make a report of the meetings of the Executive Committee.

The Secretary was instructed further to write to Mr. Chapman, of the Chesapeake & Ohio Railroad, and inquire whether Titus, Bossinger & Co.'s coupler was being tested on that road, and if it was not being tested, then to arrange to have it applied on the Delaware & Hudson Canal Co.'s line.

The Secretary was also instructed to notify the newspapers of the roads to which the different couplers have been assigned for trial, after the last one has been so assigned, and explain the causes of delay.

Mr. Rogers then made the statement that he came to the meeting to get, rather than to give, information, and that the Board of Railroad Commissioners of New York was committed to make a trial of couplers this spring, and that he came to learn how much progress the Executive Committee had made. Mr. Wilder inquired whether the coupler should be automatic or merely a safety coupler. Mr. Rogers quoted the law of the State of New York relating to the subject. He also inquired whether the Executive Committee intended to recommend to the Association the adoption of any one or more couplers as standards. He said, further, that the Michigan Railroad Commissioners had proposed that the Commissioners of the States of Michigan and New York should agree in recommending a self-coupler, and that he (Rogers) hoped to learn what the Executive Committee intended to do. A general discussion followed, the purport of which was that the Executive Committee had not yet determined what recommendations it would make to the Association at its next convention.

Mr. Wilder moved that the reading of the minutes of the last meeting be postponed.

On motion of Mr. Wilder, the following appropriations were made:

Postage	$6 00
Circulars	19 00
Engraving	6 65
Office rent	200 00
Stationery	1 25
Engraving	46 09
Postage	5 00
Circulars	5 50
M. N. Forney's salary from June 12, 1885, to December 12, 1885	1,250 00
Circulars	4 50
Postage	15 00
Circulars	4 30
	$1,563 29

A letter from Mr. Turreff, dated January 29, was read, in which he referred to the action of the Executive Committee, deciding that a charge of forty cents should only be made in case of turning new axles. He inquired what authority the committee has for

amending the rules adopted at the regular meetings of the Association.

Mr. Lentz moved that it is the sense of the committee that it has authority to *interpret* the rules, and that the Secretary be instructed to so advise Mr. Turreff.

Letters from Mr. Soule, dated November 28, December 4, December 23, 1885, and January 8, 1886, were presented.

Mr. Lentz moved that the Secretary be instructed to advise Mr. Soule that the subject of his letter of December 4 was considered at Buffalo on the 10th of February, and that it was referred to the Committee on the Revision of the Rules of Interchange. Adopted.

All of Mr. Soule's correspondence was then referred to the Committee on the Revision of the Rules of Interchange.

The Committee then adjourned.

M. N. FORNEY,
Secretary.

MINUTES OF MEETING OF THE EXECUTIVE COMMITTEE, HELD IN THE ROOMS OF THE SECRETARY, NEW YORK, MAY 13, 1886.

The meeting was called to order at 2.30 P. M. There were present, B. K. Verbryck, President; F. M. Wilder, Edward B. Wall, John W. Cloud, E. W. Grieves, F. D. Adams, William McWood, R. C. Blackall, John W. Lentz, and M. N. Forney. By invitation, Mr. Soule was also present at the meeting.

The minutes of the meeting held November 13, 1885, were read and approved. The minutes of the meeting held February 12, 1886, were read. Mr. Cloud suggested that the part of the minutes which speaks of giving the newspapers information should be changed, as the idea was that they should be advised of the assignment of couplers for trial when the assignment was completed. With this correction the minutes were adopted.

The Secretary explained that he had invited Mr. Soule to be present at the meeting to present the report of the sub-committee on the Rules of Interchange.

This report was then taken up, and after considerable discussion it was suggested that as there would not be time to consider the whole report, that Mr. Soule be requested to explain it,

and that each member take a copy of it home with him and consider it and refer it to his officers, and that it be taken up again for final consideration at the meeting of the Executive Committee on the evening before the annual convention.

Mr. Wilder moved that when the Executive Committee adjourns that it be to meet at Niagara Falls, at ten o'clock A. M., on June 7. The motion was carried.

On motion of Mr. Wilder, the further consideration of the Rules of Interchange was postponed to the meeting to be held on June 7.

Mr. Soule then continued his reading and explanation of the report.

On motion of Mr. Adams, the Secretary was instructed to furnish the railway papers with copies of the sub-committee's report on the Rules of Interchange.

The Secretary then read the names of a number of members who are in arrears for dues, and he was instructed to notify them that they are in arrears, and that if they do not pay before the next convention their names will be taken from the list of members.

The Secretary then made an explanation with reference to the defeat of the form of standard tread and flange which was submitted to letter-ballot last year, and also submitted letters received from members of the committee with reference thereto, and a circular which he had prepared, but which was not sent out to the members of the Association.

After some discussion the Secretary was instructed to bring this matter before the convention again, with an explanation of the vote and the action which was taken, and that the matter be again submitted to letter-ballot.

The Secretary explained the action of the Association with reference to the adoption of a standard brake-head and shoe. Mr. Cloud moved that the subject be referred to the next convention, and that drawings of the Collin and Christie shoe, as used on the Boston & Albany Railroad, be submitted, with the recommendation that both be adopted as standards. The motion was carried.

The Secretary then presented and read two circulars which he had prepared, one to be sent to the master car-builders of the country who are not members of the Association, and the other

circular to be sent to the general managers of railroads which have not representatives in the Association. On motion of Mr. Wilder the Secretary was instructed to send the circulars as proposed.

The Secretary was then requested to report on the present status of the car-coupler question, which he and some of the members of the Executive Committee did. A general discussion of the subject then followed.

Mr. Cloud moved that a committee of three be appointed, of which the Secretary shall be one, to receive, arrange and present to the meeting of the Executive Committee in Buffalo the results of the trials that we have been making on different roads, together with any information that that Committee can get by correspondence with parties that have been using couplers prescribed by State Commissioners. The motion was adopted.

The Chair appointed Messrs. Wall and Blackall, with the Secretary, as the committee.

The committee then adjourned.

M. N. FORNEY, *Secretary.*

MINUTES OF MEETING OF THE EXECUTIVE COMMITTEE, HELD AT THE INTERNATIONAL HOTEL, NIAGARA FALLS, JUNE 7, 1886.

Meeting was called to order at 12 M. Present, Messrs. Verbryck, Wall, Blackall, Cloud, Wilder, McWood, Lentz, Grieves and Adams, and M. N. Forney, Secretary.

Mr. Verbryck took the chair.

The reading of the minutes of the last meeting was postponed.

The Secretary stated that several parties were more than three years in arrears for their dues, and that they had been notified, but had not paid up.

It was agreed, on the suggestion of Mr. Cloud, that the Secretary should postpone action upon the matter until the convention was over, and then if they did not pay up, give them notice that their names would be dropped.

The Secretary read a letter from Mr. Rhodes.

Mr. Cloud stated that his company would furnish a speed reporter and also an electrical apparatus for the car, for use in Mr. Rhodes' experiment.

The Secretary read a statement from his annual report of the financial condition of the Association.

Mr. Wall moved that the Secretary be instructed to answer Mr. Forsyth's letter by saying that the funds of the Association would not warrant the Executive Committee in going to the expense of making an appropriation for the purpose indicated in Mr. Forsyth's letter, and that the committee suggest that Mr. Forsyth endeavor to borrow apparatus from the various railroad companies represented in the Association, the committee feeling confident that all the railroads would be willing to co-operate with them. Agreed to.

The Secretary read letters from Mr. Keene and Mr. Firestone, which, on motion of Mr. Wilder, were referred to the Committee on Coupler Tests.

The Interchange Rules were then taken up.

The Secretary read the title.

On motion of Mr. Cloud it was agreed that everything before "Code of Rules" be stricken out, and that everything from that to "General" be printed on the first page.

On motion of Mr. Blackall it was agreed that Rule 1 should stand as written.

Mr. Cloud asked if the Executive Committee thought it proper to print the marginal notes in the new rules.

Messrs. McWood, Adams and Grieves thought that it would not be necessary.

Mr. Lentz remembered that Mr. Soule laid great stress on having these marginal notes.

The Secretary suggested that it would cost considerably more to print the marginal notes.

Mr. Cloud moved that only the material in the middle column should be printed. The motion appeared to be carried.

Mr. Cloud said he would agree to reconsider on condition that the attention of the Association be called to it, with the statement that there was a division of opinion in the Executive Committee in regard to it.

Mr. Wall called for a rising vote, and the Chair requested all

those in favor of only printing the rules in the middle column to rise. The motion was lost.

On motion of Mr. Cloud it was agreed that the word "returned" be inserted between "and" and "in" in the second line of Rule 2.

On motion of Mr. Blackall, seconded by Mr. Wall, "Wheels worn out" was stricken out of Rule 3. It was moved by Mr. Cloud, seconded by Mr. Lentz, that the terms used in Rule 15 be substituted for defects of wheels in Rule 3, and considered seriatim. Agreed to.

At this point Mr. Forney withdrew from the room, and Mr. Wall acted as Secretary.

It was moved by Mr. Cloud that Section A be made to read, "Wheels with flat or shelled-out spots, exceeding two and one-half inches in length."

It was moved by Mr. Lentz, and seconded, that Section A stand as it reads in Rule 15.

It was moved by Mr. Wall as an amendment, and seconded by Mr. Lentz, that *a*, under Rule 3, should be "worn flat, flat spots exceeding two and one-half inches in length or diameter." Agreed to.

Mr. Wall moved that the section under Rule 15 commencing "worn flange" be transposed into Rule 3 and headed *b*. Agreed to.

Mr. Cloud moved that Section *c* of Rule 3 be made to cover the four next sections of Rule 15, and that it read "*c*. Wheels cracked or broken in any manner."

Seconded by Mr. Blackall and agreed to.

On motion of Mr. Cloud it was agreed that Section *g* be lettered Section *d*, and stand as written.

Mr. Blackall moved that *h* stand as it is and be lettered *e*.

Seconded by Mr. Cloud and agreed to.

It was moved by Mr. Blackall and seconded by Mr. Cloud that Section *i* remain as written and be lettered *f*. Agreed to.

Mr. Cloud moved that there be inserted in Section *j* "Axles bent or with journals cut," and that it be lettered *g*.

Mr. Adams thought in Rule 3 there should have been something about wheels shelled out.

Mr. Cloud suggested to put it "Wheels with flat or shelled-out spots."

Mr. Adams suggested that if there was no objection to it that that might be considered the sense of the committee.

Mr. Wall moved to reconsider Section *a* under head of "Defects of Wheels."

Mr. Cloud said that if it was introduced there it would be necessary to leave out the terms "worn flat, worn flange, and cracked plates."

Mr. Lentz said that he would like "shelled out" to go in just as it reads.

Mr. Wall read the rule.

Mr. Cloud moved "that that be introduced into Rule 3, under letter *d*, and that the present *d*, *e* and *f* be changed to *e*, *f* and *g* respectively. Agreed to.

On motion of Mr. Cloud, it was agreed that "Axles bent or with journals cut," should be inserted in section *j*, and that it be lettered *h*.

Mr. Cloud moved that Section *k* remain as it stands and be lettered *i*. Agreed to.

Mr. Cloud moved that *j*, under defects of mounting wheels on axles, be changed to read "loose wheel." Agreed to.

Mr. Blackall moved that Section *l* be changed so as to read, "Wheels out of gauge, or that measure less than 4 feet 5 inches between flanges, or 5 feet 4 inches over treads of wheels," and that a cut be printed to represent the way the wheel is to be gauged. Agreed to.

Mr. Lentz moved that Section *n* be changed to *l* and read, "Brakes in bad order." Agreed to.

No amendments were made to the remainder of the rule beyond making the proper alterations in the lettering.

Rule 4 was read.

Mr. Cloud moved that the word "frame" be stricken out in the last line and that the rule then stand as written. Agreed to.

Rules 7, 8 and 9 were read and allowed to stand as written.

Mr. Cloud moved that Rule 10 be made to read "Loose wheels may be replaced or wheels may be refitted and charged to owners." Agreed to.

Rule 11 it was agreed should stand as written.

Rule 12 was read.

Mr. Cloud moved that the old rule be substituted for the proposed one, and that the word "new" be inserted between "turn-

ing" and "axles," in the last line, and that the prices be still further considered.

Seconded by Mr. Blackall.

The question being put, three voted "yes" and four "no"; the Chair then voted "yes," making it a tie.

Mr. Lentz moved to reconsider the vote. Agreed to.

Mr. Cloud moved that that part of the rule now numbered 12 down to "If new wheel," be stricken out, and in its place be substituted from the Rules of Interchange for 1885 all of Rule 9 down to and including "turning new axles," inserting the word "new," the prices to be still further considered in detail.

Seconded by Mr. Blackall and agreed to.

Mr. Cloud moved to substitute "And with an addition of one dollar and a half for all labor for each pair of wheels and axles removed." Agreed to.

A recess was then taken until two o'clock.

On reassembling at two P. M., the Chairman read a letter from Mr. Rhodes.

The Secretary read a letter from Mr. McIlwain.

Rule 14 was then read.

Mr. Cloud had an amendment to this, and on motion of Mr. Wilder, it was agreed to go on to Rule 15, suspending consideration of Rule 14 until Mr. Cloud had his amendment in shape.

On motion of Mr. Cloud, it was agreed to insert "Bill should state number of brackets cracked."

Mr. Cloud moved to insert "Bill should state variations from limit prescribed in Rule 3." Agreed to.

Mr. Cloud moved that Rule 16 be inserted, and that the committee consider Rule 7 to go in there. Agreed to.

Old Rule 7 was read.

Mr. Cloud submitted the form of the proposed bill, which, on motion of Mr. Lentz, seconded by Mr. McWood, was approved.

Mr. Cloud moved that it read "Bills for wheel and axle work must make specific mention of wheel and axle removed and applied, with credits and charges complete."

Mr. Wall moved as an amendment, that the clause about specific credit or charge be omitted altogether. The amendment was accepted by Mr. Cloud and adopted.

Rule 17 was read.

Mr. Cloud moved that Rule 17 be changed to read "The sills

other than centre sills to which the draw timbers are attached may be spliced once and held by," etc. Agreed to.

Rule 18 was read, and the figures "15, 16 or 17" inserted.

Rules 19, 20 and 21 were read and approved.

Rule 22 was read.

Mr. Cloud moved that the first and second lines be made to read "32 feet long or over" and the second and fourth "under 32 feet." The motion was lost.

Mr. Cloud moved that the percentage be changed to 6.

Seconded by Mr. Wall and agreed to.

Rule 23 was read and approved.

Rule 24 was read.

Mr. Cloud moved to add "requisitions for such material shall state that it is for repairing cars, and give the numbering and lettering of such cars when possible." Agreed to.

Rule 25 was read.

As to pine and oak Mr. Blackall moved "that that be three." Agreed to.

Rules 26 and 27 were read and approved.

Rule 28 was read.

Mr. Blackall moved, seconded by Mr. Cloud, that "private party" and "private corporation" be stricken out. Agreed to.

Rule 29 was read.

Mr. Lentz moved to insert the following: "In case of any question or dispute arising under these Rules, the same shall be referred to the Executive Committee, whose duty it shall be to decide the case. This decision shall be final and binding upon all parties concerned." Agreed to.

Rule 30 read.

Mr. Cloud moved that "private party" or "private corporation" be stricken out, and that all the last paragraph be stricken out, beginning with "In case of doubt." Agreed to.

Rule 31 was approved.

The Chairman announced that the next thing in order was the coupler question.

Mr. Cloud, as Chairman of that committee, requested that the committee be allowed a little more time. He would be better able to report on the following evening.

Mr. Wall moved that when the committee adjourn it should

be with the understanding that they meet the following evening at 7.30 P. M. to consider the coupler question. Seconded.

The report on Standard Draw-gear was read.

Mr. Cloud said that he did not think the report should be accepted, for the reason that not a dimension was given in it, and it was only a general recommendation of the style, and not creditable as the work of a committee, and unfit to go into the proceedings of the Association.

He would move that the Executive Committee refer the matter back to the committee, and state that they did not think the report in proper shape to be submitted to the Association. Agreed to.

The report on Dead-blocks was read.

It was moved by Mr. Cloud, seconded by Mr. Wilder, that the report be submitted to the Association. Agreed to.

Mr. Cloud moved that only the recommendations given in the reports be read, as otherwise it would be impossible to finish them. Agreed to.

The report of the Committee on Revising Height of Miller Draw-bar was read in abstract.

Mr. Cloud moved that it be referred to the Association. Agreed to.

Mr. Forney asked if the two reports might not be modified so as to be brought into substantial agreement.

Mr. Cloud thought that the modification might be made in the convention.

The report of the Committee on Trap Doors in Roofs of Passenger Cars was read.

Mr. Cloud moved that it be submitted to the convention. Agreed to.

The report of the Committee on the Slipping of Wheels was read in abstract.

Mr. Lentz moved that it be submitted to the Association. Agreed to.

Report of Committee on Standard Freight Car Truck was read in abstract.

It was agreed, on motion, to submit it to the convention.

The committee then adjourned to the following evening, at 7.30 P. M.

MINUTES OF MEETING OF THE EXECUTIVE COMMITTEE, HELD IN THE INTERNATIONAL HOTEL, NIAGARA FALLS, TUESDAY EVENING, JUNE 8, 1886.

The report of the sub-committee of the Executive Committee appointed to prepare the report of the Tests of Automatic Car Couplers, at Buffalo, N. Y., September 15, 16, and 17, 1885, was offered and read by Mr. Cloud.

Moved, by Mr. Wilder, that the report, as prepared by the sub-committee, be adopted as the report of the Executive Committee.

Moved, by Mr. Blackall, to amend the report by inserting the McKeen and Perry Coupler.

After discussion, it was, by general consent, decided to vote upon one at a time. The McKeen carried. The Perry lost.

The report was amended by inserting the McKeen Coupler.

Motion to accept the report carried.

This report is published in the Annual Report of the Association, pages 74–94.

Moved, by Mr. Cloud, that the assessment be made $5 for this year for active members. Carried.

Mr. Rhodes, of the Committee on Brake Tests, requested to make a statement to the Executive Committee, and, upon motion of Mr. Wall, he was invited to present his statements.

Mr. Rhodes read the proposed plan of the Freight-brake Tests, and asked for an appropriation for the carrying out of the tests.

Moved, by Mr. Wall, that the President select three members of the Executive Committee to procure, for the benefit of the Brake Committee, the funds they desire to assist them in furthering the tests, such amount not to exceed $500. Carried.

President appointed Messrs. Wall, Adams and McWood as the committee.

Moved, by Mr. Wall, that the committee adjourn. Carried.

MINUTES OF THE MEETING OF THE EXECUTIVE COMMITTEE, HELD DIRECTLY AFTER ADJOURNMENT OF MASTER CAR-BUILDERS' ASSOCIATION, IN THE CASINO AT NIAGARA FALLS, JUNE 10, 1886.

The President of the Association was in the chair. Mr. Grieves was appointed Secretary.

Bill of R. W. Ryan for reporting meeting of Executive Committee was presented.

Mr. Forney was instructed to use his discretion in paying the bill.

On motion of Mr. Blackall, the Secretary was instructed to write to the parties writing letters on couplers and ask them to give their reasons for recommending these couplers.

On motion of Mr. Cloud, seconded by Mr. Blackall, it was agreed that the salary of Secretary to Mr. Forney be made $2,000 for ensuing year, if he will accept the office on these terms. Mr. Forney was called in and accepted at the above salary, with the understanding that he might resign the office at any time after giving due notice.

President Verbryck decided that members of the Executive Committee cannot recommend couplers for trial.

The committee then adjourned.

STANDARD DIMENSIONS,

FORMS OF CONSTRUCTION, ETC.,

ADOPTED BY THE MASTER CAR-BUILDERS' ASSOCIATION.

WHEELS AND AXLES.

FORM OF WHEEL TREAD AND FLANGE.

The engraving, Fig. 55, represents the standard form of tread and flange adopted by letter-ballot in 1886. For the action with reference thereto *see Sixteenth Annual Report, pages* 178 *and* 179, and Twentieth Annual Report, page 68.

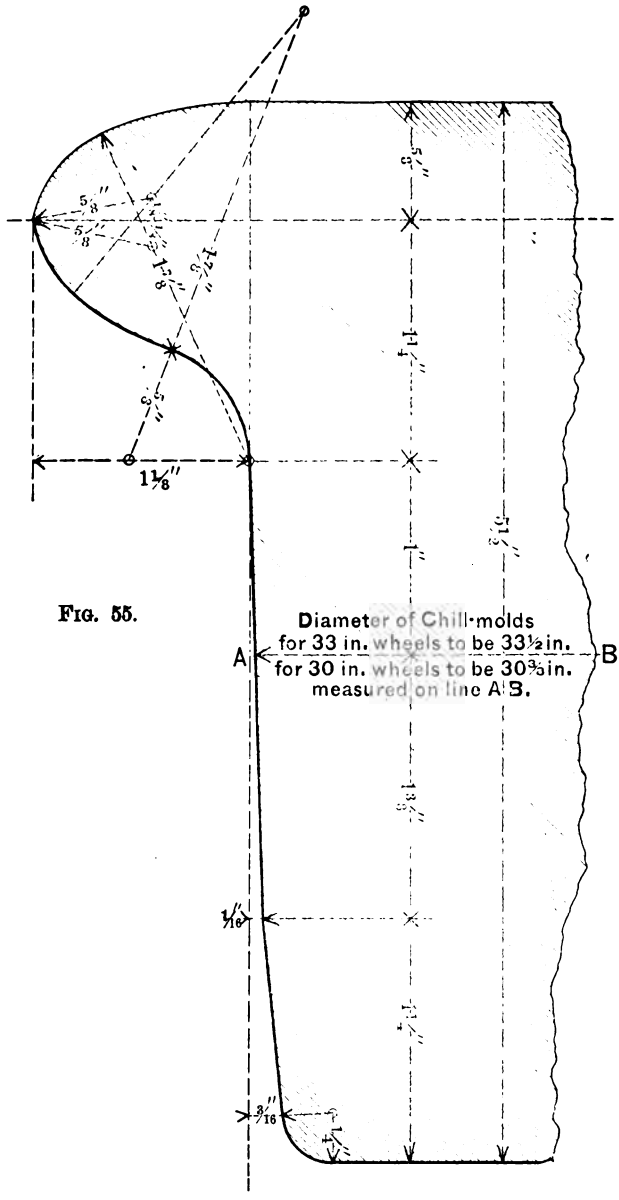

5/8"
5/8"
5/8"
1 7/8"
1 7/8"
5/8"
1 1/8"
1 1/4"
1"
5 1/2"
A
B
Diameter of Chill-molds
for 33 in. wheels to be 33½ in.
for 30 in. wheels to be 30⅜ in.
measured on line A B.
3 3/4"
1/16
3/16
1/4"
1 1/4"

FIG. 55.

DISTANCE BETWEEN THE BACKS OF THE FLANGES OF CAR-WHEELS.

The standard distance between the backs of the flanges of car-wheels, as indicated at A., Fig. 56, is 4 feet $5\frac{3}{8}$ inches.

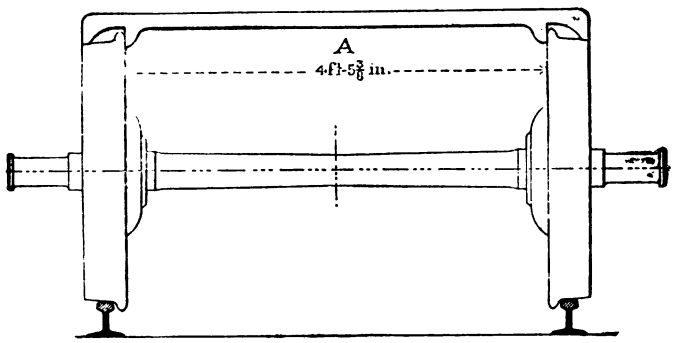


FIG. 56.

This distance was proposed in a resolution adopted at the Seventeenth Annual Convention, held in Chicago in 1883 (*see page* 55 *of the Report of that meeting*), and was afterwards submitted to and approved by a letter-ballot (*see pages* 118–120 *of Seventeenth Annual Report*).

At the Nineteenth Annual Convention, held at Fort Monroe, Va., in 1885, a committee recommended (*see page* 16 *of Report of that meeting*) that in fitting wheels on axles, a variation of $\frac{1}{8}$ inch each way from the standard distance of 4 feet $5\frac{3}{8}$ inches between flanges be allowed, making the maximum distance 4 feet $5\frac{1}{2}$ inches, and the minimum distance 4 feet $5\frac{1}{4}$ inches. This recommendation was referred to a letter-ballot and was adopted as a standard by the Association (*see pages* 111–119 *of Annual Report*).

WHEEL AND AXLE GAUGES.

At the Sixteenth Annual Convention, held in Philadelphia in 1882 (*see page* 197 *of Report for that year*), it was

"*Resolved*, That the sense of this meeting is that all the gauges recommended by the Committee on Wheel Gauge should be in use in all repair and car-building shops of every equipment."

These gauges are shown in Plate I.

BORING WHEELS.

At the Seventeenth Annual Convention (*see page* 57 *of the Report*) a resolution was adopted recommending that six dogs be used for centering wheels when they are bored.

STANDARD AXLE.

At the Annual Convention held in Boston in 1873, a standard for car-axles was recommended, the form and dimensions of which, excepting the diameter in the middle, were substantially the same as those shown in Plate II. (*For other action, with reference thereto, see Tenth Annual Report, page* 99; *Twelfth Annual Report, page* 129; *and Thirteenth Annual Report, page* 103.) The dimensions shown in Plate II., with the exception of the diameter in the middle, were adopted by both the Master Car-Builders' and American Railway Master Mechanics' Associations, after a conference of committees appointed by each Association. (*See Fourteenth Annual Report, page* 130).

At the Convention held in Saratoga in 1874, it was proposed to increase the diameter of the standard axle in the middle, from $3\frac{7}{8}$ in. to $4\frac{1}{4}$ in. A resolution was adopted to refer the proposed change to the members of the Association for approval by letter-ballot. It was so referred (*see pages* 156–162 *of the Eighteenth Annual Report*), and more than two-thirds of the votes cast were in favor of increasing the diameter in the middle to $4\frac{1}{4}$ in. This change has therefore been adopted, and Plate II. represents the present standard axle, as modified by this action of the Association.

JOURNAL-BEARING, JOURNAL-BOX AND PEDESTAL.

JOURNAL-BEARING.

Plates III., IV. and V. represent the standard for journal-bearings, journal-boxes and pedestals, recommended at the Eighth Annual Convention, held in Cincinnati in 1874. (*See page* 40 *of Report for that year.*) This action was reaffirmed at the Fifteenth Annual Convention, held in New York in 1881. (*See pages* 14, 15 *and* 27 *of Report for that year.*)

BRAKE SHOE.

At the Twentieth Annual Convention, held at Niagara Falls, in 1886 (*see page* 72 *of the Report for that year*), a resolution was adopted to submit the Christie brake-head and shoe, represented

by Plate VI., to a letter-ballot for adoption as a standard. It was so submitted, and as more than two-thirds of the votes cast were in favor of such adoption, it is now one of the standards of the Association.

SCREW THREADS.

What is known as the Sellers' or Franklin Institute System of Screw-threads, Bolt-heads and Nuts was recommended as a standard at the Fifth Annual Convention, held in Richmond, Va., in 1872. (*See pages* 18 *and* 21 *of the Report of that meeting. See also pages* 82 *and* 83 *of Report of Thirteenth Annual Convention.*)

This system was proposed by Mr. William Sellers, and was described by him in an essay read before the Franklin Institute of Philadelphia, April 21, 1864. In that essay the system is described as follows:

"The proportions for the proposed thread and its comparative relation to the sharp and rounded threads, will be readily understood from the accompanying diagram, in which Figs. 51 and 58

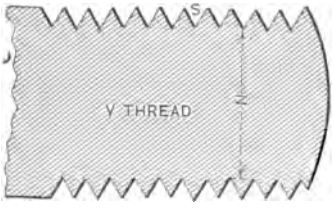


FIG. 51.

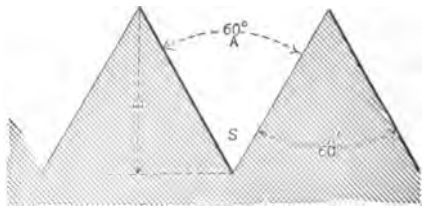


FIG. 58.

FIG. 59.

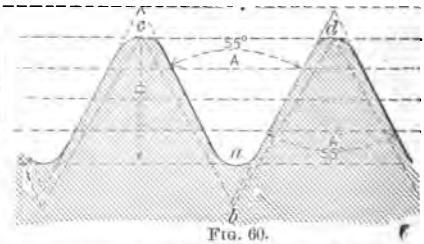


FIG. 60.

FIG. 61.

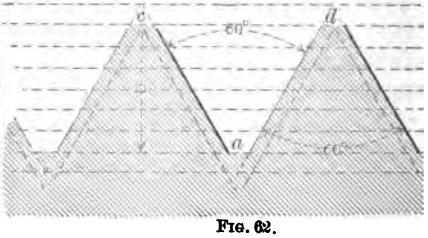


FIG. 62.

—the latter on an exaggerated scale—represent a sharp thread, Figs. 59 and 60 a rounded top and bottom to the English proportions, and Figs. 61 and 62 the flat top and bottom, all of the same pitch. The angle of the proposed thread is fixed at 60°, the same as the sharp thread, it being more readily obtained than 55°, and more in accordance with the general practice in this country. Divide the pitch, or which is the same thing, the side of the thread into eight equal parts, take off one part from the top and fill in one part in the bottom of the thread, then the flat top and bottom will equal one-eighth of the pitch; the wearing surface will be three-quarters of the pitch, and the diameter of screw at bottom of the thread will be expressed by the formula :

$$diameter - \frac{1.299}{number\ of\ threads\ per\ inch.}$$

The accompanying tables are reprinted from Mr. Sellers' essay, and gives the proportions of his standard screw-threads, nuts and bolt-heads.

PROPORTIONS FOR SELLERS' STANDARD SCREW-THREADS, NUTS AND BOLTS.

Screw-Threads.				Nuts.				Bolt Heads.			
Diameter of screw.	Threads per inch.	Diameter at root of thread.	Width of flat.	Short diameter rough.	Short diameter finish.	Thickness rough.	Thickness finish.	Short diameter rough.	Short diameter finish.	Thickness rough.	Thickness finish.
$\frac{1}{4}$	20	.185	.0062	$\frac{1}{2}$	$\frac{7}{16}$	$\frac{1}{4}$	$\frac{3}{16}$	$\frac{1}{2}$	$\frac{7}{16}$	$\frac{1}{4}$	$\frac{3}{16}$
$\frac{5}{16}$	18	.240	.0074	$\frac{19}{32}$	$\frac{17}{32}$	$\frac{5}{16}$	$\frac{1}{4}$	$\frac{19}{32}$	$\frac{17}{32}$	$\frac{19}{64}$	$\frac{1}{4}$
$\frac{3}{8}$	16	.294	.0078	$\frac{11}{16}$	$\frac{5}{8}$	$\frac{3}{8}$	$\frac{5}{16}$	$\frac{11}{16}$	$\frac{5}{8}$	$\frac{11}{32}$	$\frac{5}{16}$
$\frac{7}{16}$	14	.344	.0089	$\frac{25}{32}$	$\frac{23}{32}$	$\frac{7}{16}$	$\frac{3}{8}$	$\frac{25}{32}$	$\frac{23}{32}$	$\frac{25}{64}$	$\frac{3}{8}$
$\frac{1}{2}$	13	.400	.0096	$\frac{7}{8}$	$\frac{13}{16}$	$\frac{1}{2}$	$\frac{7}{16}$	$\frac{7}{8}$	$\frac{13}{16}$	$\frac{7}{16}$	$\frac{7}{16}$
$\frac{9}{16}$	12	.454	.0104	$\frac{31}{32}$	$\frac{29}{32}$	$\frac{9}{16}$	$\frac{1}{2}$	$\frac{31}{32}$	$\frac{29}{32}$	$\frac{31}{64}$	$\frac{1}{2}$
$\frac{5}{8}$	11	.507	.0113	$1\frac{1}{16}$	1	$\frac{5}{8}$	$\frac{9}{16}$	$1\frac{1}{16}$	1	$\frac{17}{32}$	$\frac{9}{16}$
$\frac{3}{4}$	10	.620	.0125	$1\frac{1}{2}$	$1\frac{3}{16}$	$\frac{3}{4}$	$\frac{11}{16}$	$1\frac{1}{4}$	$1\frac{3}{16}$	$\frac{5}{8}$	$\frac{11}{16}$
$\frac{7}{8}$	9	.731	.0138	$1\frac{7}{16}$	$1\frac{3}{8}$	$\frac{7}{8}$	$\frac{13}{16}$	$1\frac{7}{16}$	$1\frac{3}{8}$	$\frac{23}{32}$	$\frac{13}{16}$
1	8	.837	.0156	$1\frac{5}{8}$	$1\frac{9}{16}$	1	$\frac{15}{16}$	$1\frac{5}{8}$	$1\frac{9}{16}$	$\frac{13}{16}$	$\frac{15}{16}$
$1\frac{1}{8}$	7	.940	.0178	$1\frac{13}{16}$	$1\frac{3}{4}$	$1\frac{1}{8}$	$1\frac{1}{16}$	$1\frac{13}{16}$	$1\frac{3}{4}$	$\frac{29}{32}$	$1\frac{1}{16}$
$1\frac{1}{4}$	7	1.065	.0178	2	$1\frac{15}{16}$	$1\frac{1}{4}$	$1\frac{3}{16}$	2	$1\frac{15}{16}$	1	$1\frac{3}{16}$
$1\frac{3}{8}$	6	1.160	.0208	$2\frac{3}{16}$	$2\frac{1}{8}$	$1\frac{3}{8}$	$1\frac{5}{16}$	$2\frac{3}{16}$	$2\frac{1}{8}$	$1\frac{3}{32}$	$1\frac{5}{16}$
$1\frac{1}{2}$	6	1.284	.0208	$2\frac{3}{8}$	$2\frac{5}{16}$	$1\frac{1}{2}$	$1\frac{7}{16}$	$2\frac{3}{8}$	$2\frac{5}{16}$	$1\frac{9}{16}$	$1\frac{7}{16}$
$1\frac{5}{8}$	$5\frac{1}{2}$	1.389	.0227	$2\frac{9}{16}$	$2\frac{1}{2}$	$1\frac{5}{8}$	$1\frac{9}{16}$	$2\frac{9}{16}$	$2\frac{1}{2}$	$1\frac{9}{32}$	$1\frac{9}{16}$
$1\frac{3}{4}$	5	1.491	.0250	$2\frac{3}{4}$	$2\frac{11}{16}$	$1\frac{3}{4}$	$1\frac{11}{16}$	$2\frac{3}{4}$	$2\frac{11}{16}$	$1\frac{3}{4}$	$1\frac{11}{16}$
$1\frac{7}{8}$	5	1.616	.0250	$2\frac{15}{16}$	$2\frac{7}{8}$	$1\frac{7}{8}$	$1\frac{13}{16}$	$2\frac{15}{16}$	$2\frac{7}{8}$	$1\frac{15}{32}$	$1\frac{13}{16}$
2	$4\frac{1}{2}$	1.712	.0277	$3\frac{1}{8}$	$3\frac{1}{16}$	2	$1\frac{15}{16}$	$3\frac{1}{8}$	$3\frac{1}{16}$	$1\frac{9}{16}$	$1\frac{15}{16}$

PROPORTIONS FOR SELLERS' STANDARD NUTS AND BOLTS.

Rough Nut = one and one-half diameter of bolt + $\frac{1}{8}$.

Finished Nut = one and one-half diameter of bolt + $\frac{1}{16}$.

Rough Nut = diameter of bolt.

Finished Nut = diameter of bolt—$\frac{1}{16}$.

Rough Head = one and one-half diameter of bolt + $\frac{1}{8}$.

Finished Head = one and one-half diameter of bolt + $\frac{1}{16}$.

Rough Head = one-half distance between parallel sides of head.

Finished Head = diameter of bolt—$\frac{1}{16}$

At the Sixteenth Annual Convention, held in Philadelphia in 1882 (*see page* 229 *of the Report of that meeting*), it was

"*Resolved*, That this Association deprecates the use of screws larger or smaller in diameter by a small fraction of an inch than the sizes specified for the Sellers' or Franklin Institute system, and that all the members of the Association are urged to abandon entirely the use of over or under size screws."

At the same meeting the Committee on Standard Screw Threads was instructed (*see page* 229 *of the Report of the meeting*) "to procure a set of the unhardened gauges manufactured by the Pratt & Whitney Company, these to be kept among the archives of the Association as the standard of measurement of screw-threads and for ultimate reference in case of need." The Committee was also instructed to get a standard two-foot rule.

The Committee procured the screw-gauges and rule and delivered them to the Association, at the adjourned meeting held at Niagara Falls in October, 1882, and these are now in the possession of the Secretary.

LIMIT GAUGES FOR ROUND IRON.

At the Seventeenth Annual Convention, held in Chicago in June, 1883, the following resolution was presented (*see pages* 37 *and* 38 *of the Report of that meeting*):

"*Resolved*, That the following sizes for limit gauges for round iron for the Sellers' standard threads are hereby established by the Master Car-Builders' Association as the standard sizes for such gauges, and that it is recommended that round iron of the nominal standard sizes be made of such diameter that each one *will* enter the large or + end of the gauge intended for it, *in any way*, and will *not* enter the small or − end *in any way:*

SIZES OF LIMIT GAUGES FOR ROUND IRON.

Nominal diameter of Iron. Inches.	Large size. + end. Inches.	Small size. − end. Inches.	Total variation. Inches.
1/4	.2550	.2450	.010
5/16	.3180	.3070	.011
3/8	.3810	.3690	.012
7/16	.4440	.4310	.013
1/2	.5070	.4930	.014
9/16	.5700	.5550	.015
5/8	.6330	.6170	.016
3/4	.7585	.7415	.017
7/8	.8840	.8660	.018
1	1.0095	.9905	.019
1 1/8	1.1350	1.1150	.020
1 1/4	1.2605	1.2395	.021"

A motion to submit this resolution for decision by letter-ballot was adopted. On submitting it to the members, more than two-thirds of the votes cast were in favor of the resolution (*see pages* 116–118 *of Seventeenth Annual Report*). It was, therefore, adopted, and the dimensions named are now the standard sizes of

FIG. 63.

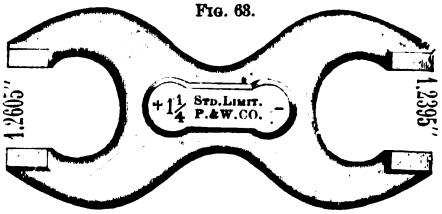


FIG. 64.

limit gauges for round iron. Fig. 63 represents the form of caliper gauge that was proposed, and Fig. 64 shows a cylindrical gauge to be used for testing the size of the caliper gauges.*

DRAW GEAR.

HEIGHT OF DRAW-BARS.

At the Third Annual Convention, held in Chicago in 1869, three feet was adopted as the standard height of draw-bars for passenger cars, measured from the top of rail to centre of draw-head. (*See page* 34 *of the History and Early Reports of the Master Car-Builders' Association.*)

The standard height for draw-bars, which was recommended, or was intended to be recommended, at the Fifth Annual Convention, held in Richmond, Va., in 1872, is 2 ft. 9 in., measured perpendicularly from the tops of the rails to the centre of the draw-bar, when the car is empty. (*See pages* 42, 43, *and* 46 *of the original Report of that meeting.* ‡ *See also Report of Thir-*

---

* These gauges are manufactured by the Pratt & Whitney Company, of Hartford, Conn.

‡ There is evidently an error in the original report. It was Mr. Ford's amendment, and not Mr. Myers', which was adopted. The standard height recommended was 2 ft. 9 in.—M. N. F., Secretary.

teenth Annual Convention, pages 108 *and* 109, *and Report of Eighteenth Annual Convention, page* 30.)

ATTACHMENTS OF DRAW-BARS.

The method of attaching draw-bars at their rear ends, shown in Figs. 65, 66, and 67, was recommended at the Tenth Annual Convention, held in New York in 1876 (*see pages* 65 *and* 70 *of Report of that meeting*).

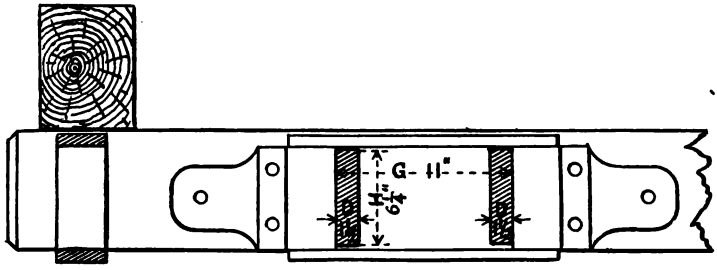


FIG. 65.

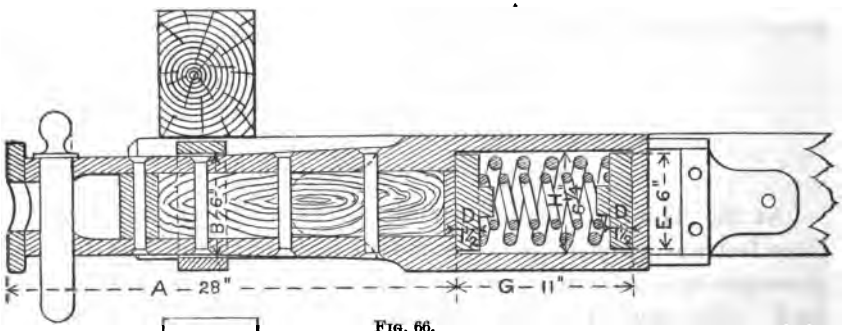
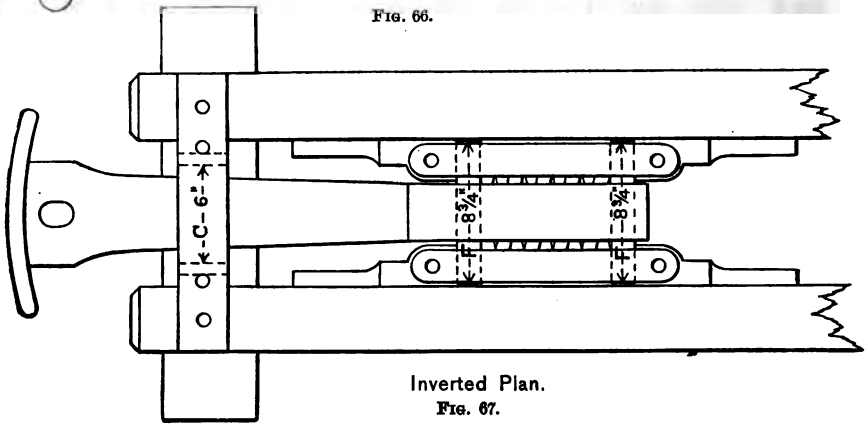


FIG. 66.



Inverted Plan.

FIG. 67.

DIMENSIONS OF DRAW-BARS.

The following were recommended as standard dimensions for draw-bars at the Thirteenth Annual Convention, held in Chicago in 1879 (*see pages* 96, 98, 108, *and* 109 *of Report of that year*):

The length *A* (*see Fig.* 66), from the end of head to the first follower-plate, to be 28 in.

The depth (*B*) at outer yoke in carrying-plate to be 6 in.

The width (*C*) of opening for draw-bar, in the carrying-plate or yoke, to be 6 in.

The follower-plates to be made of wrought-iron, and rectangular in form, the thickness (*D*) to be 1½ in.; width (*E*) 6 in.; and the length (*F*) 8¾ in.

The length (*G*) of the house of the draw-bar to be 11 in., and the width (*H*) 6¼ in.

The pin-hole in draw-bar to be made to take a pin 2 × 1½ in.

When a strap is used in back end of draw-bar, it shall have a clear space of 11 in. long and 6¼ in. wide. When a spindle is used, it shall be 2 in. diameter, 17 in. long from under side of head to outer edge of key; the key to be 2½ in. wide and ½ in. thick.

The draw-bars to be so placed in the cars as to locate the coupling-pins not less than five inches from the centre to the face of the dead-woods.

CAPACITY OF DRAW-SPRINGS.

At the same meeting (*see page* 100 *of Report*), it was recommended that the capacity of draw and buffer springs should not be less than 18,000 lbs.

DEAD BLOCKS.

Standard dimensions of dead-blocks were recommended at the Sixteenth Annual Convention, held in Philadelphia, in 1882 (*see pages* 45 *and* 47 *of Report of that meeting*). These dimensions were amended at the Eighteenth Annual Meeting, held in Saratoga, as follows:

Double dead-blocks are to be made 8 in. square on the face and 6 in. thick, and are to be placed 22 in. apart from centre to centre, and to have 14 in. space between them.

Single dead-blocks are to be not less than 30 inches long, 7 inches thick and 8 inches deep, measured vertically.

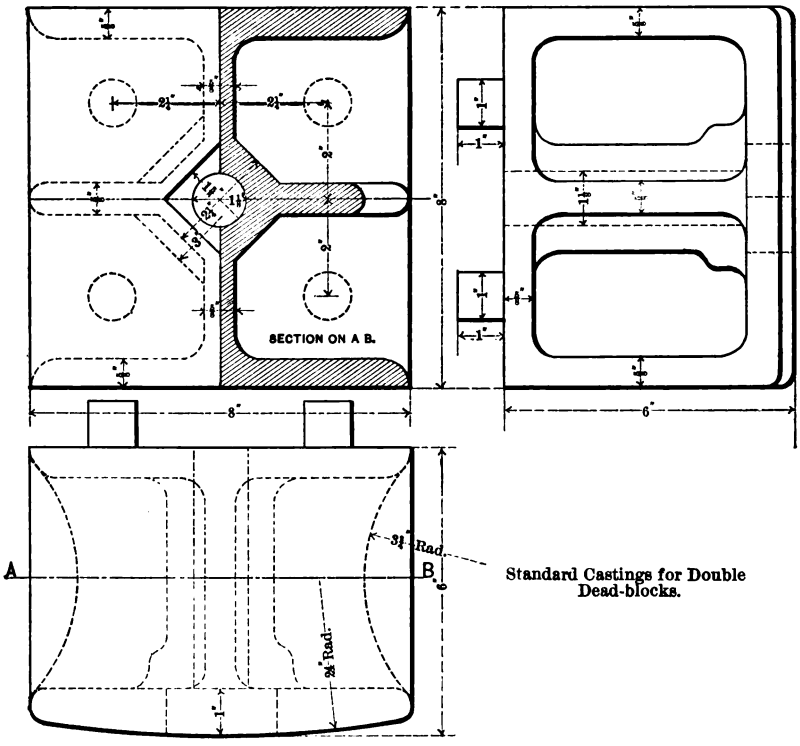
By order of the Executive Committee the amendments were submitted for the approval of the members by letter-ballot (*see pages* 156–162 *of the Eighteenth Annual Report*), and as more than two-thirds of the votes cast were in favor of the amendments, they were adopted.

At the Twentieth Annual Convention, held at Niagara Falls in 1886, it was agreed (*see page* 48 *of Report of that year*) to submit the following recommendations for decision by letter-ballot: "That when double dead-blocks are used, that their vertical height and their width, measured crosswise to the track, be each 8 inches, and their thickness, measured lengthwise to the track, be 6 inches; that they each consist of a casting as represented by Figs. 68–70."

"That when a beam, attached to the end-sill, is used for carrying the dead-blocks, that it be made 36 inches long, not less than 4 inches thick and 8 inches vertical depth."

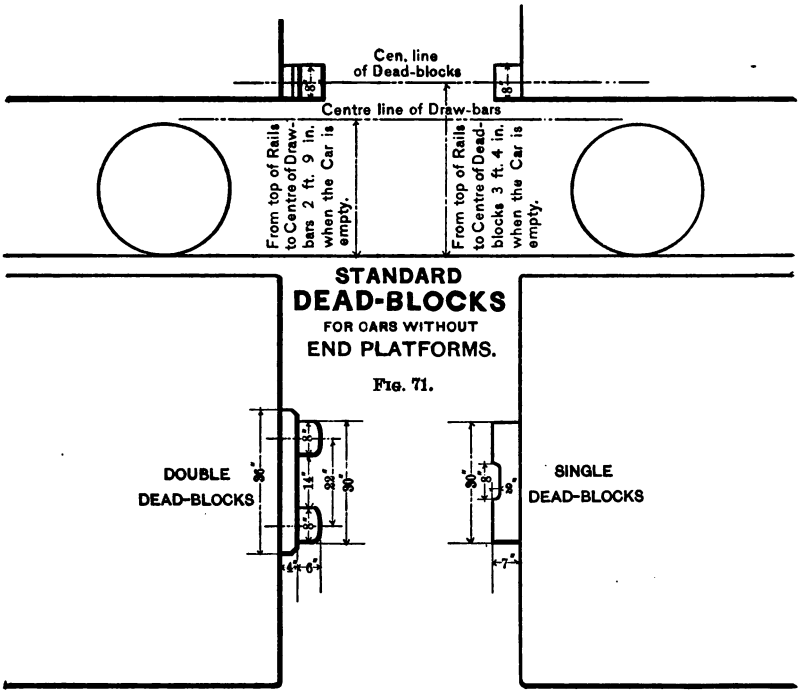
These recommendations were submitted to letter-ballot and were adopted. (*See pages* 183 *and* 184.) Figs. 71 and 72 represent the present standards for double and single dead-blocks.

Fig. 68. Fig. 69.



Standard Castings for Double Dead-blocks.

Fig 70.


Cen. line
of Dead-blocks
Centre line of Draw-bars
From top of Rails to Centre of Draw-bars 2 ft. 9 in. when the Car is empty.
From top of Rails to Centre of Dead-blocks 3 ft. 4 in. when the Car is empty.
STANDARD
DEAD-BLOCKS
FOR CARS WITHOUT
END PLATFORMS.
Fig. 71.
DOUBLE
DEAD-BLOCKS
SINGLE
DEAD-BLOCKS

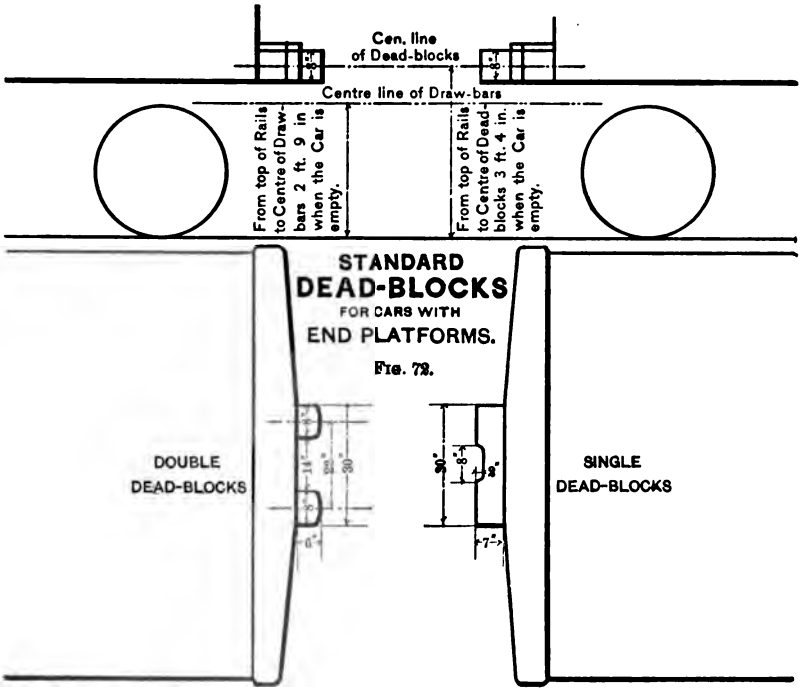

Cen. line
of Dead-blocks
Centre line of Draw-bars
From top of Rails to Centre of Draw-bars 2 ft. 9 in. when the Car is empty.
From top of Rails to Centre of Dead-blocks 3 ft. 4 in. when the Car is empty.
STANDARD
DEAD-BLOCKS
FOR CARS WITH
END PLATFORMS.
DOUBLE
DEAD-BLOCKS
SINGLE
DEAD-BLOCKS

Fig. 72.

PROTECTION OF TRAINMEN FROM ACCIDENTS.

POSITION OF BRAKE-SHAFTS.

At the Thirteenth Annual Convention, held in Chicago in 1879, the following resolutions, having reference to the construction of the attachments to cars for the protection of trainmen from accidents, were adopted:

The attachments referred to are shown in Figs. 73 and 74.

"*Resolved*, That this Association recommend that all brake-shafts be placed on the left-hand corner of the car, when a person is standing on the track facing the end of the car." (*See page* 85 *of Report of that meeting.*)

Fig. 73 shows the brake-shaft in the position designated.

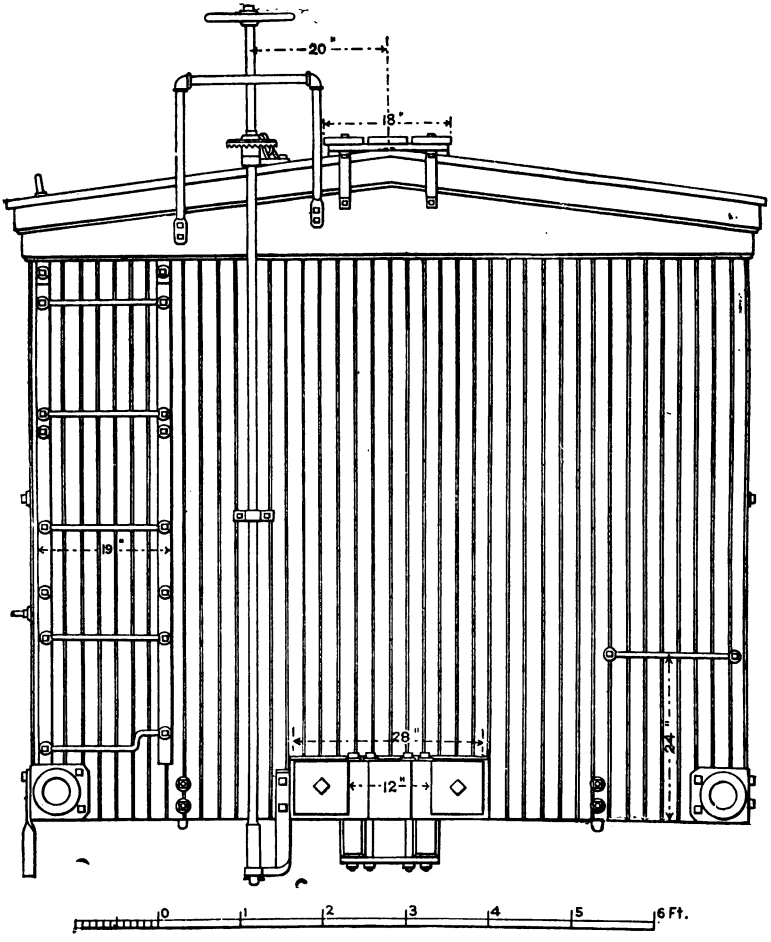


FIG. 73.

ATTACHMENTS FOR THE SAFETY OF TRAINMEN.

BRAKE-STEPS OR PLATFORM AND FASTENING OF BRAKE RATCHET-WHEEL AND PAWL.

[*See pages* 109 *and* 119 *of Thirteenth Annual Report.*]

"That the small platform placed at one end of freight cars, to fasten the brake-pawl, etc., be discontinued, the ratchet-wheel and pawl to be fastened to a suitable casting on the roof."

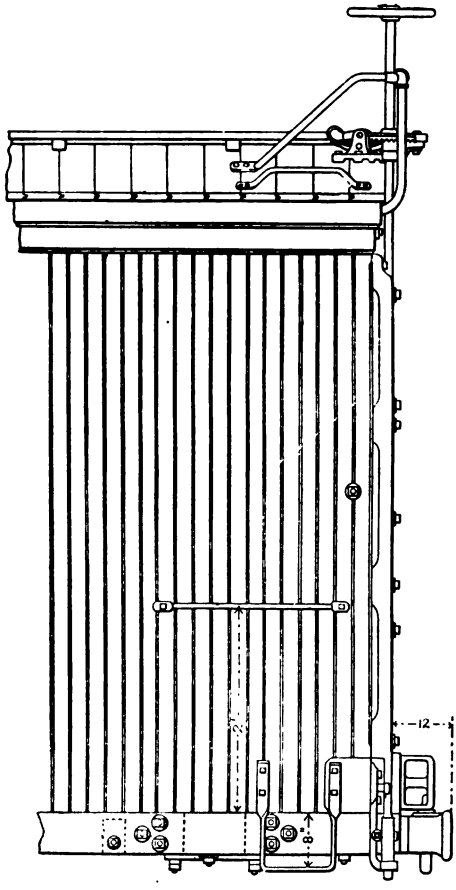


FIG. 74.

ATTACHMENTS FOR THE SAFETY OF TRAINMEN.

RUNNING BOARDS.

[*See pages* 109 *and* 114 *of Thirteenth Annual Report.*]

"That the running-boards be not less than 18 in. wide and 1 in. thick, the ends of which to project $5\frac{1}{2}$ in. outside of the

boarding, the projections to be supported by two braces made of 2 in. by $\frac{1}{4}$ in. iron."

STEPS.

[*See pages* 108 *and* 110 *of Thirteenth Annual Report.*]

"That two good substantial steps, made of wrought-iron $\frac{1}{2}$ by $1\frac{3}{4}$ in., be fastened, one to each side-sill, at diagonal corners of the car."

LADDER AND HANDLES.

[*See pages* 109, 110 *and* 111 *of Thirteenth Annual Report.*]

"That each box and stock car have two ladders, not less than five steps in each ladder, made of $\frac{5}{8}$-in. round iron, projecting $3\frac{1}{2}$ in. from the siding, securely fastened to each end at diagonal corners, with a handle directly over the ladders, on the roof.

"Mr. C. E. Garey moved that the lower steps of the ladder have a guard or projection in order to prevent men slipping when swinging around the end of the car to get on the step.

"The recommendation as amended was adopted." *

CHECK-CHAINS.

At the Eighth Annual Convention, held in Cincinnati, in 1874, the following resolution was adopted (*see pages* 27 *and* 72 *of Report of that meeting*):

"*Resolved*, That truck and car-body check-chains are, when properly applied, a valuable acquisition on passenger equipment, and your committee recommend their general use."

---

* In a report on the Causes of Accidents to Trainmen, made in 1883 (*see page* 28), it was recommended by the Committee that "where ladders are on the end of the car a handle be placed horizontally about 24 in. above the lower edge of sill on side of car above the steps, to enable trainmen to get a firm hold before or while using the steps; also when the ladder is on end of car a handle should be placed on opposite corner from the ladder, and when ladders are on the side of car, two such handles should be placed on each end of the car about 24 in. above the bottom of sill, thus enabling train and yard men to sustain themselves while making couplings, and which would be vastly beneficial should they stumble or otherwise lose their footing."

This report was "received" by the Association, but no other action was taken regarding the attachments which were recommended by the committee, and are shown in Figs. 73 and 74.

MARKING CARS.

A resolution was adopted at the Sixteenth Annual Convention (*see page* 158 *of Report*), requesting all railroad companies whose initials are the same as those of other railroad companies, to stencil the name of the road in full on some part of the car where it can readily be seen by freight agents.

SYSTEM OF LETTERING AND NUMBERING FAST FREIGHT LINE CARS.

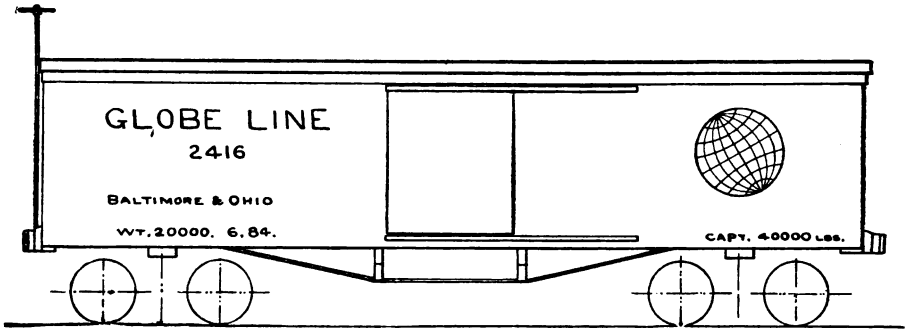
At the Eighteenth Annual Convention, held in Saratoga (*see page* 96 *of the Report of that meeting*), the following resolutions were adopted, which, with Figs. 75, 76 and 77, describe a proposed system of lettering and numbering "Fast Freight Line" cars:

1st. The half of sides of car on which the doors do not slide, to show the name of the "Fast Freight Line" (spelled out in full) and the car number (in the Fast Freight Line series) immediately below it. In the same panel and within two feet of the sill shall appear (in letters not over four inches high) the name of the railroad company owning or contributing the car, and between the same and the sill shall appear the light weight of the car, with such other information as it is found advisable to give in connection with same.

2d. The doors should have no marks whatever.

3d. The ends to show the initials of the "Fast Freight Line" with the car number (in the Fast Freight Line series) and the light weight just below them; no other marks will appear on ends of car.

4th. The half sides of cars on which the doors do slide, to be reserved for advertising symbols or trade-marks where used. The use of profuse lettering in this panel is to be discouraged, however, and it is recommended that only the simplest trade-marks or advertising signs should be used; the capacity of the car to appear near the sill in this same panel.



CARS IN FAST FREIGHT LINE SERVICE.

FIG. 75.

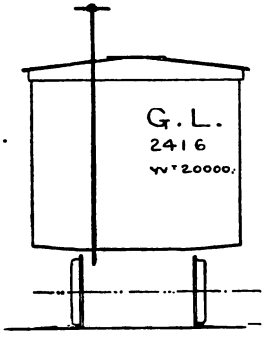


FIG. 76.

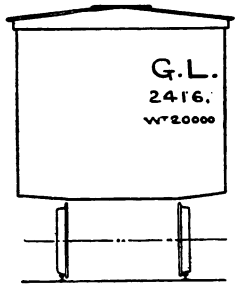


FIG. 77.

At the meeting referred to it was decided to refer these resolutions for the decision of the members by letter-ballot. In accordance with this action they were so referred (*see pages* 156–162 *of the Eighteenth Annual Report*), and as more than two-thirds of the votes cast were in favor of the resolution, they, and the system they described, are adopted as a standard by the Association.

STORING OF LINE CARS ON FOREIGN ROADS.

At the Seventeenth Annual Convention, held in Chicago in June, 1883, the following resolutions were adopted (*see page* 109 *of the Report of that meeting*) :

" *Whereas*, It is a common practice to store line cars on side tracks during summer months or dull times away from home, after they have beeen in severe service ; and

"*Whereas*, Many of the cars after being so stored are found to be more or less out of proper condition, so that they need more or less repairs, and when put into service cause much detention to traffic and many transfers;

Be it Resolved, therefore, That it is the sense of this meeting that all line cars owned by foreign companies should be returned to their owners instead of being stored on foreign tracks, and that a competent man should be detailed to inspect the stored cars and to arrange to have the necessary repairs made during the time such cars are out of service."

DICTIONARY OF TERMS.

At the Fifth Annual Convention, held in Richmond, Va., in 1872 (*see page* 18 *of Report of that meeting*), it was

"*Resolved*, That a committee be appointed with power to publish an illustrated book, defining the proper terms or names of each and every part used in the construction of railway cars, and a description of the use of the same."

At the Fourteenth Annual Convention, held in Detroit in 1880 (*see pages* 11 *to* 20 *of Report of that meeting*),

"The committee to whom was assigned the duty of preparing a Dictionary of Terms used in the Construction of Cars submitted a copy of the book and reported that they had finished their work and were discharged."

ENTERTAINMENTS.

At the Ninth Annual Convention, held in New York in 1875, the following resolution was adopted (*see page* 113 *of Report of that meeting*):

"*Whereas*, The practice of entertaining the members of this Association by its friends has become an established custom, and has thus assumed somewhat the character of an obligation to which those who have so generously dispensed hospitality have in a measure felt themselves obliged to conform; and

"*Whereas*, The expenditure of time and money for this purpose has in many cases been very much greater than the members of this Association have a right to expect should be devoted to their enjoyment; and

"*Whereas*, The expense of such hospitality has in some cases been interpreted as having a significance which has been the cause of embarrassment to members;

"*Therefore*, We desire by this resolution, first, to express our thanks for the liberality of our friends in the past; and, secondly, to make the request in this public way that in the future there shall be no more expenditure of money for the public entertainment of members of this Association.

The preamble and resolution were unanimously adopted.

CODE OF RULES

GOVERNING THE CONDITION OF, AND REPAIRS TO, FREIGHT CARS FOR THE INTERCHANGE OF TRAFFIC

ADOPTED BY THE MASTER CAR-BUILDERS' ASSOCIATION.

Revised at Niagara Falls, N. Y., June, 1886.

GENERAL.

RULE 1—Each Railway Company shall give to foreign cars, while on its line, the same care as to oiling and packing that it gives to its own cars.

Care of foreign cars.

DELIVERING AND RECEIVING CARS AT INTERCHANGE POINTS.

RULE 2—Cars must be delivered in good running order, and returned in as good general condition as when received.

Condition of cars delivered.

RULE 3—Cars may be refused for any of the following defects:

Defects for which cars may be refused.

DEFECTS OF WHEELS.

a. Worn or slid flat, exceeding $2\frac{1}{2}$ inches in length or diameter.

b. Worn flange, flanges less than one inch thick, or having flat vertical surfaces, extending more than $\frac{7}{8}$ inch from tread.

c. Wheels cracked or broken in any manner.

d. Shelled out; Wheels with treads defective on account of circular pieces shelling out, leaving round, flat spots

Defect cards, Form of.

RULE 5—Defect cards shall be 4½ inches by 6½ inches, and of the form shown below. They shall be printed on both sides, and shall be filled in on both sides with ink or indelible pencil.

(*Name of Road.*)

Car No.....Date.....

Initial..... .....Line.....

Will be received at any point on this company's line, with the following defects:

.....

.....

.....

.....

NOTE.—Fill in defects on both sides with ink or indelible pencil. Attach this card securely to the inside cross-tie timber.

.....Inspector at .....

Making repairs noted by defect cards

RULE 6—Any Company finding a car with a defect card attached may make the repairs noted by the card, and render bill for same to the Company attaching card; the card to accompany bill as voucher for the work done.

DEFECTS FOR WHICH OWNERS ARE RESPONSIBLE.

Defective roofs, responsibility for.

RULE 7—Roofs lost from cars on account of faulty construction, shall be replaced at the expense of the owners.

Locks, responsibility for.

RULE 8—Locks on cars are at owner's risk

Wheels and axles damaged by fair usage, responsibility for.

RULE 9—Wheels and axles used to replace those broken or worn out under fair usage will be charged to the Company owning the car. Wheels made flat by sliding, or wheels with treads or flanges chipped, are not to be considered as worn out under fair usage; such wheels must be replaced by the Company sliding or chipping them at its own expense.

Wheels loose and out of gauge.

RULE 10—Loose wheels may be replaced, or wheels out of gauge may be refitted, and charged to owners.

RULE 11—In the case of cars belonging to private parties or corporations, other than Railway Companies, or that are not cared for or controlled by a railroad company, the repairs of such parts as fail under fair usage, or from faulty construction, may be made by Railway Companies, and shall be paid for by the owners.

Individual cars, repairs of.

BILLS FOR WHEEL AND AXLE WORK.

RULE 12—Bills rendered for wheels and axles shall be in accordance with the following schedule of prices for material, with the proper debits and credits:

Wheels and axles, prices for.

	NEW.	SECOND-HAND.	SCRAP.
One 36-inch wheel.....	$13 00	$9 00	$5 00
One 33-inch wheel.....	10 00	7 00	4 50
One 30-inch wheel (or less)...	9 00	6 00	4 00
One axle.....	10 00	7 00	4 00

and with an additional charge of $1.50 for all labor, for each pair of wheels and axle removed from the truck. If new wheels and axles are substituted for second-hand wheels and axles, proper charges and credits shall be allowed, although such substitution be made on account of only one loose or defective wheel, or a defective axle.

RULE 13—Bills for wheels and axle work shall be in the following form:

Wheels and axles, form of bills.

.....*Company,*

Address,.....

To.....*Railroad Company, Dr.*

For Wheels and Axles put under.....*Cars, Month of*.....188

Date and Place.	Initial, Kind, and Number of Car.	Wheels and Axles Removed.					Wheels or Axles Applied.						
		Maker	Date Cast.	Number.	Cause of Removal.	Shop Marks on Wheels and Axles.	Maker.	Date Cast.	Number.	New or Second Hand.	Material. Net Charge.	Labor Charge.	Total Net Charge.

Received payment, $.....

Date,.....188

.....

Bills for wheel and axle work must make specific mention of
ch wheel and axle removed or applied.

Bills which do not embody all the information called for by
e headings of the columns, may be declined until made to con-
rm to the requirements of the rule. If no marks are found on
heels or axles removed, a notation to that effect must be made
face of bill.

RULE 14—In noting on bills the cause of removal of wheels
d axles, the following terms shall be used: Wheels and axles, terms to be used in rendering bills.

Worn Flat—Flat spots exceeding 2½ inches in length or
ameter. Care must be taken to distinguish this defect from
lid flat."

Worn Flange—Flanges less than 1 inch thick, or having flat
rtical surface extending more than ⅞ inches from the tread.

Cracked Plate—Cracks in plate when not extending through
b to axle. Length of crack must be stated.

Cracked Hub—Cracks extending from axle outwardly through
b. Length of crack must be stated.

Cracked Brackets—Bills should state the number of brackets
acked.

Broken in pieces—

Shelled Out—Wheels with treads defective on account of
cular pieces shelling out, leaving round flat spots, deepest at
e edge, with a raised centre. Wheels must not be condemned
om this cause, unless the spots are over 2½ inches in length or
ameter, or are so numerous as to endanger the safety of the
heel.

Loose Wheel—

Out of Gauge—Bills should state the variation from limits
escribed in Rule 3.

Small Journal—Journal smaller than prescribed by Rule 3.
ameter of journal must be stated.

REPAIRING AND SETTLING FOR FOREIGN CARS.

RULE 15—Foreign cars if damaged shall be promptly repaired
the Company causing the damage; such repairs shall be Foreign cars damaged, repairing.

thoroughly made, and the work shall conform in detail to the original construction (provided it can be determined from the car itself), and with the same quality of material originally used; new standard parts may, however, be used if agreed to.

Precautions in mounting wheels.

RULE 16—Wheels on the same axle must be of the same circumference.

New Wheels must not be mated with second-hand wheels.

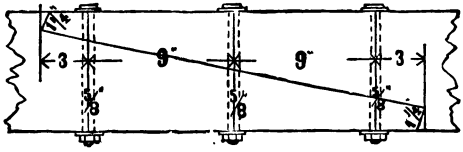
Prick-punching or shimming the wheel fit must not be allowed.

Wheels applied must be marked on inside with date of application.

The wheel seats of foreign axles must not be reduced to fit wheels, but the wheels must be bored to fit axles.

Spliced sills.

RULE 17—The sills other than centre sills to which draw timbers are attached, may be spliced once and held by three $\frac{5}{8}$-inch bolts, as shown below.



The splice may be located either side of body bolster, but the nearest point of any splice must not be within 12 inches of same.

Repairing cars with wrong material.

RULE 18—Any Company repairing foreign cars with wrong material, and not in compliance with Rules 15, 16 and 17, shall be liable for the cost of changing such car to the original standard, or to the requirements of Rule 17.

Repairing cars with wrong materials, defect cards

RULE 19—A Company using wrong materials in such repairs, shall place upon the car, at the time and place that the work is done, a defect card, which defect card shall pass the car back to the owning road.

Foreign cars destroyed, repairing, etc.

RULE 20—When either the bodies or trucks of cars are destroyed on a foreign road, the owners must be notified immediately.

The Company destroying bodies or trucks shall have its option whether to rebuild or settle for same.

Foreign cars rebuilding, manner of doing work.

RULE 21—If the Company destroying the car elects to rebuild, either body or trucks, or both, the original plan of construction must be followed, and the original kind and quality of materials used. The rebuilding must be completed within 60 days from the original date of damage or destruction. In such cases no allowance shall be made for betterments.

Foreign cars destroyed, basis of settlement.

RULE 22—The settlement prices for new cars and trucks shall be as follows:

Box car, eight-wheel, 32 feet long and over	$450 00
" " under 32 feet long	430 00
Stock car, eight-wheel, 32 feet long and over	450 00
Stock car, eight-wheel, under 32 feet long	435 00
Gondola car, eight-wheel, Drop-bottom, 20 tons or over	400 00
" " " 15 " or less.	375 00
" " hopper bottom, 25 tons or over	450 00
" " " 20 " over	425 00
" " " 15 " less.	400 00
" " plain, 32 feet long or over	350 00
" " plain, under 32 feet	325 00
Flat car, eight-wheel, plain, 32 feet long or over	300 00
" " " under 32 feet	290 00
Box car, four-wheel	230 00
Coal car, four-wheel, ordinary	200 00
Gondola car, four-wheel, drop bottom	300 00
Trucks, car, four-wheel, 1 pair	200 00

Depreciation due to age shall be estimated at 6 per cent. per annum, upon the yearly depreciated value of bodies and trucks, provided, however, that allowances for depreciation shall in no case exceed 60 per cent. of the value new.

Refrigerator cars and other freight cars designed for special purposes, not specifically referred to above, shall be settled for at special rates, as may be agreed to by the parties in interest, but the deduction for depreciation due to age shall be on the same basis as for regular freight equipment cars.

Foreign cars destroyed, returning trucks.

RULE 23—If only the body of a car is destroyed and the Company destroying it elects to return the trucks, they shall be put in good order and delivered free of freight or other charges to the nearest point on the road of the Company owning the car.

FURNISHING MATERIAL AND BILLING WORK DONE.

Furnishing material.

RULE 24—Companies shall promptly furnish to each other upon requisition, and forward free over their own road, material for repairs of their cars injured upon foreign lines. Requisitions for such material shall state that it is for repairs of cars, and give numbering and lettering of such cars when possible.

Bills for work done, basis.

RULE 25—Bills for work done on defect cards or for material furnished on requisition shall be on the basis of the following charges and credits:

MATERIAL.	CHARGES.	CREDIT.
Cast Iron.....per lb.	2c.	¾c.
Malleable Iron ..... "	5.	½.
Bolts, Nuts and Forgings..... "	4.	1.
Cast Steel..... "	9.	¾.
Brass Journal Bearings..... "	16.	9.
Phosphor Bronze Bearings..... "	18.	10.
Pine (Yellow, White or Norway).....per ft.	3.	——
Oak..... "	3.	——
Labor .....per hr.	20.	——
1 Box or Stock Car, Side Door.....	$5.00.	——
1 Box or Stock Car, End Door.....	3.00.	——

No percentage to be added for either material or labor.

MISCELLANEOUS.

Leased cars, treatment of in bills.

RULE 26—In rendering bills leased cars shall be treated as belonging to Railway Companies whose name or initials they bear.

RULE 27—For the mutual advantage of Railway Companies erested, the settlement for a car damaged or destroyed on a vate track shall be assumed by the Railway Company deliver- the car upon such track.

Cars destroyed on private sidings, settlement for.

RULE 28—Any Railway Company may become a party to this de of Rules by giving notice through one of its General icers to the Secretary of the Master Car-Builders' Association. Any Railway Company which is a party to this Code of les shall be bound by same through its successive revisions, il one of its general officers files with the Secretary of the ster Car-Builders' Association its notification of withdrawal. Acceptance or rejection of this Code of Rules must be as a ole, and no exception to an individual rule or rules shall be id.

Conditions of participation in Code of Rules.

RULE 29—The Executive Committee of the Master Car- ilders' Association shall receive and consider all changes, endments and additions to this Code of Rules which may be posed to them during the year, and shall report all such pro- als to the Association at the time of the Annual Convention revision, with their recommendations in reference to same. case of any dispute or question arising under these rules same may, by mutual consent, be referred to the Executive nmittee, whose duty it shall be to decide the case. This ision shall be final and binding upon all parties concerned.

Rules, revision of, duties of Executive Committee, M. C. B. Ass'n.

RULE 30—In the revision of these Rules by the Association, h Railway Company shall be entitled to one vote for each 00 8-wheel cars (or major part thereof) owned, or in process of rchase. Two 4-wheel cars shall count as one 8-wheel car. A o-thirds vote shall be necessary for adoption.

Rules, revision of basis of voting.

RULE 31—This Code of Rules shall take effect August 1, 1886, l shall be introduced for discussion and revision at one session the Master Car-Builders' Association Convention each year.

Rules, in effect Aug. 1st, 1886.

LIST OF RAILROAD COMPANIES.

WHICH HAVE ADOPTED THE CODE OF RULES GOVERNING T CONDITION OF, AND REPAIRS TO, FREIGHT CARS FOR T INTERCHANGE OF TRAFFIC.

The following is as complete a list as can now be made the companies which have adopted the above code. If the nar of any railroad companies which have adopted the rules are included in the following list, the officers of such companies requested to notify the Secretary of the Master Car-Build Association, so that the names of such companies may be cluded in the list hereafter :

Alabama Great Southern.
Ashuelot.
Atchison, Topeka & Santa Fé.
Atlantic & Pacific.
Baltimore & Ohio.
Beech Creek.
Boston & Albany.
Boston & Lowell.
Boston & Maine.
Boston, Hoosac Tunnel & Western.
Buffalo, New York & Phila.
Buffalo, Rochester & Pittsburgh.
Burlington, Cedar Rapids & Northern.
Burlington & Missouri River R. R., in Neb.
Cairo, Vincennes & Chicago Line.
Canada Southern.
Central Iowa.
Central Vermont.
Champaign & Havana.
Chesapeake, Ohio & Southwestern.
Chesapeake & Ohio.
Chicago, Burlington & Kan City.
Chicago, Burlington & Nor ern.
Chicago, Burlington & Quin
Chicago, Milwaukee & St. Pa
Chicago & Northwestern.
Chicago, Rock Island & Paci
Chicago, St. Louis & Pittsbur
Chicago, St. Louis & Weste
Chicago, St. Paul, Minneap & Omaha.
Chicago & Alton.
Chicago & Grand Trunk.
Chicago & Iowa.
Cincinnati, Washington & B timore.
Cleveland, Columbus, Cinc nati & Indianapolis.
Cleveland, Akron & Columb
Cleveland & Marietta.
Cincinnati, Jackson & Ma inaw.
Cincinnati Southern.
Connecticut River.

mberland Valley.
ayton & Union.
elaware, Lackawanna & Western.
elaware & Hudson Canal Co.
etroit, Grand Haven & Milwaukee.
etroit, Lansing & Northern.
etroit, Mackinac & Marquette.
es Moines & Fort Dodge.
ast Tennessee, Virginia, & Georgia.
ll Brook Coal Co.
tchburg.
int & Pere Marquette.
rand Trunk & Great Western Division & Midland Division.
ulf, Colorado & Santa Fé.
annibal & St. Joseph.
artford & Connecticut Western.
ousatonic.
ouston & Texas Central.
inois Central.
inois Midland.
diana, Bloomington & Western.
dianapolis & St. Louis.
tercolonial of Canada.
ternational & Great Northern.
ansas City, Clinton & Springfield.
ansas City, Fort Scott & Gulf.
ansas City, Springfield & Memphis.
ansas City, St. Joseph & Council Bluffs.
ake Erie & Western.
ake Shore & Michigan Southern.
Lehigh Valley.
Louisville, Evansville & St. Louis.
Louisville, New Albany & Chicago.
Louisville & Nashville.
Maine Central.
Marquette, Houghton & Ontonagon.
Mexican Central.
Michigan Central.
Milwaukee, Lake Shore & Western.
Minneapolis & Pacific.
Minneapolis, Sault Ste. Marie & Atlantic.
Minneapolis & St. Louis.
Minnesota & Northwestern.
Missouri Pacific.
Montana Union.
Mobile & Ohio.
Newport News & Mississippi Valley.
New York Central & Hudson River.
New York City & Northern.
New York, Chicago & St. Louis.
New York & Greenwood Lake.
New York, Lake Erie & Western.
New York, New Haven & Hartford.
New York, Ontario & Western.
New York, Pennsylvania & Ohio.
New York, West Shore & Buffalo.
New York & New England.
New York, Susquehanna & Western.
Norfolk Southern.

Norfolk & Western.
Northeastern of S. C.
Northern Central.
Northern Pacific.
Old Colony.
Ohio & Mississippi.
Ogdensburg & Lake Champlain.
Pennsylvania Company.
Pennsylvania Railroad.
Pennsylvania & New York Canal and Railroad Co.
Peoria, Decatur & Evansville.
Petersburg.
Pittsburgh, Cincinnati & St. Louis.
Pittsburgh & Lake Erie.
Philadelphia & Reading.
Providence & Worcester.
Richmond, Fredericksburg & Potomac.
Richmond & Danville.
Rochester & Pittsburgh.
Rome, Watertown & Ogdensburg.
Savannah, Florida & Western.
St. Paul & Duluth.
St. Joseph & Grand Island.
Saginaw Valley & St. Louis.
Scioto Valley.
Seaboard & Roanoke.
Shenango & Allegheny.
Southern Central.
Southern Pacific, Atlantic System.
Terre Haute & Indianapolis.
Texas Pacific.
Tioga.
Toledo, Cincinnati & St. Louis
Toronto, Grey & Bruce.
Troy & Boston.
Union Pacific.
Valley.
Virginia Midland.
Wabash, St. Louis & Pacific.
Western Car Co.
Western Maryland.
Wilmington, Columbus & Augusta.
Wilmington & Northern.
Wilmington & Weldon.
Wisconsin Central.
West Jersey.

CONSTITUTION AND BY-LAWS

OF THE

ASTER CAR-BUILDERS' ASSOCIATION,

As Adopted at the Meeting held at Niagara Falls,

October 10 and 11, 1882.

ARTICLE I.

NAME.

Section 1. The name of the Association shall be "The Mas-r Car-Builders' Association."

ARTICLE II.

OBJECTS AND LIMITS OF ACTION.

Sec. 1. The objects of this Association shall be the advance-ent of knowledge concerning the construction, repair and ser-ce of railroad cars, by discussions in common, investigations d reports of the experience of its members; to provide an ganization through which the members, and the companies ey represent, may agree upon such joint action as may be quired to bring about uniformity and interchangeability in the rts of railroad cars, to improve their construction and to adjust e mutual interest growing out of their interchange and repair; t the action of the Association shall have only a recommenda-ry character, and shall not be binding upon any of its members the companies represented in it.

ARTICLE III.

MEMBERSHIP.

Sec. 1. There shall be three classes of members, Active, Rep-sentative and Associate Members. Each member must sign the onstitution or authorize the Secretary to sign for him.

Sec. 2. Any person holding the position of Superintendent the Car Department, Master Car-Builder, or Foreman of a ailroad Car Shop, or one representative from each Car Manu-

facturing Company, or other company owning over one thous cars, which are not in process of purchase by other parties, m become an Active Member by paying his dues for one ye Unless expelled from the Association his membership shall c tinue until his written resignation is received by the Secretary

SEC. 3. Any person having a practical knowledge of car c struction may become a Representative Member by receivin *written* appointment from the President, General Manager General Superintendent of any railroad company, to represent interests in the Association, provided that no Representat Member shall represent more than one railroad or system roads under one General Manager or General Superintende Such member shall have all the privileges of an Active Memb including one vote on all questions, and in addition thereto sh on all measures pertaining to the adoption of standards or expenditure of money have one more vote for each full c thousand cars which are owned, or which are in use and in p cess of purchase, by the road or system which he represents. membership shall continue until notice is given the Associat of his withdrawal, or of the appointment of his successor. railroads or system of roads, under one General Manager or G eral Superintendent, shall have more than one Representat Member. In the enumeration of four, six, eight, or more whee cars, four axles to count as one car.

SEC. 4. Civil and mechanical engineers, or other persons h ing such a knowledge of science or practical experience in m ters pertaining to the construction of cars as would be of espec value to the Association or railroad companies, may beco Associate Members on being recommended by three members associates. The names of such candidates shall then be refer to the Executive Committee, which shall report to the Asso tion on their fitness for such membership. They shall be elec by ballot at any regular meeting of the Association, held not l than six months after a candidate has been proposed, and f dissenting votes shall reject. The number of Associate Memb shall not exceed twenty. Any Associate Member who shall to attend a meeting of the Association for three consecutive ye shall cease to be a member. Associate Members shall be entit to all the privileges of Active Members, excepting that of voti and being elected to office in the Association.

SEC. 5. Any member who, during the meetings of the Asso-tion, shall be guilty of dishonorable conduct which is disgrace-to a railroad officer and a member of the Association, or shall use to obey the Chairman when called to order, may be expelled a vote of two-thirds of the members present at any meeting d within one year from the date of the offense.

ARTICLE IV.

OFFICERS.

SEC. 1. The officers of the Association shall be a President, ee Vice-Presidents, a Treasurer, Secretary, and six Executive mbers. The six Executive Members, with the President, ce-Presidents and Treasurer, shall constitute the Executive mmittee.

ARTICLE V.

DUTIES OF OFFICERS.

SEC. 1. The duties of all officers shall be such as usually pertain their offices, or may be delegated to them by the Executive mmittee of the Association.

ARTICLE VI.

EXECUTIVE COMMITTEE.

SEC. 1. The Executive Committee shall exercise a general pervision over the interests and affairs of the Association, ommend the amount of the annual assessment, to call, to pare for and to conduct general conventions, and to make all cessary purchases, expenditures and contracts required to nduct the current business of the Association, but shall have no wer to make the Association liable for any debt to an amount yond that which at the time of contracting the same shall be the Treasurer's hands in cash, and not subject to prior bilities. All expenditures for special purposes shall only be de by appropriations acted upon by the Association at a regular eting.

SEC. 2. The Executive Committee shall make a report of the ceedings of each of its meetings, such reports to be made cessible to all the members of the Association. It shall have proceedings of the regular meetings of the Association blished, subject to instructions from the latter. It shall have

power to withhold from the published proceedings papers
reports containing old matter readily found elsewhere, t
specially meant to advocate personal interests, those carel
prepared or controverting well-established facts, and those pu
speculative or foreign to the purposes of the Association, or
which in the opinion of the Committee are unworthy of pub
tion; it being understood, though, that this discretion s
always be exercised subject to the action of the Association.

SEC. 3. Two-thirds of the members of the Executive Commi
may call special meetings of the Association, to be held not
than thirty days after a notice thereof has been mailed to
member of the Association.

SEC. 4. Five members of the Executive Committee shall
stitute a quorum for the transaction of business.

ARTICLE VII.

ELECTION AND APPOINTMENT OF OFFICERS AND TENURE OF OFF

SEC. 1. The officers, excepting as otherwise herein provi
shall be elected at the regular meeting of the Association, hel
June of each year, and the election shall not be postpo
excepting by unanimous consent.

PRESIDENT AND TREASURER.

SEC. 2. The President and Treasurer shall be elected by wri
ballots by a majority of the votes cast, and shall hold office
one year, or until successors are chosen.

VICE-PRESIDENTS AND EXECUTIVE MEMBERS.

SEC. 3. The Vice-Presidents shall hold office for one year,
the Executive Members for two years, or until successors
chosen. Three Vice-Presidents and three Executive Member
be elected each year; provided, however, that three of the la
shall be appointed by the President holding office at the time
the adoption of this amendment. The Executive Members t
appointed to hold office until successors are chosen at the an
meeting following.

SEC. 4. In the election of Vice-Presidents each Active
Representative Member may cast as many votes as there are V
Presidents to be elected. The number of votes may be given

candidate or distributed among more, as the person entitled cast them may choose. Executive members shall be voted for the same way. The three candidates for each of the offices ned who receive the largest number of votes shall be declared cted.

SECRETARY.

SEC. 5. A Secretary, who may or may not be a member of the sociation, shall be appointed by a majority of the Executive mmittee at its first meeting after the annual election, or as soon reafter as the votes of a majority of the members of the ecutive Committee can be secured for a candidate. The term office of the Secretary thus appointed, unless terminated sooner, ll cease at the first meeting after the next annual election ceeding his appointment of the Executive Committee anized for the transaction of business. Two-thirds of the mbers of the Executive Committee shall, however, have power remove the Secretary at any time. His compensation, if any, ll be fixed for the time that he holds office by a vote of a jority of the Executive Committee. He shall also act as cretary of the Executive Committee.

TREASURER.

SEC. 6. The Treasurer shall be required to give bonds to an ount which a majority of the members of the Executive Com- ttee demand. No bill shall be paid by him for the Association, cepting for current expenses, until it has been certified by the rson or persons authorized to contract it, and audited by the ecutive Committee.

ARTICLE VIII.

COMMITTEES.

SEC. 1. At the first session of the annual meeting the President ll appoint a Nominating Committee of five members, who are t officers of the Association, and this committee shall send the mes of nominees for officers of the Association to fill vacancies the ensuing year to the Secretary before the election of officers in order, and they shall be announced by him as soon as re- ved. The election shall not be held until the day after such nouncement, excepting by unanimous consent. Any three other mbers may nominate candidates for any office.

AUDITING COMMITTEE.

SEC. 2. At the first session of each annual meeting an Audit Committee, consisting of three members not officers of the A ciation, to be nominated by any member who does not hold of shall be elected in the same way as Vice-Presidents and Execu Members are voted for. This Auditing Committee shall exam the accounts and vouchers of the Treasurer and certify whet they have been found correct or not. After the performance this duty they shall be discharged by the acceptance of t report by the Association.

COMMITTEE ON SUBJECTS FOR INVESTIGATION AND DISCUSSIO

SEC. 3. At each annual meeting the President shall appoi committee whose duty it shall be to report at the next an meeting subjects for investigation and discussion, and if the s jects are approved by the Association, the President, as hereina provided, shall appoint committees to report on them. It s also be the duty of the committee to receive from members q tions for discussion during the time set apart for that purp This committee shall determine whether such questions are s able ones for discussion, and if so, they shall so report them to Association.

COMMITTEES OF INVESTIGATION.

SEC. 4. When the Committee on Subjects has reported the Association approved of subjects for investigation, the Pr dent shall appoint special committees to investigate and repor them, and he may be authorized to appoint a special committe investigate and report on any subject which a majority of members present may approve of.

ARTICLE IX.

THE RECOMMENDATION OF STANDARDS.

SEC. 1. Any proposition recommending the adoption of st ard constructions or practice shall be in writing and be acc panied by drawings, if the latter are necessary for a c understanding of the subject. Such proposition shall then submitted to the Association for discussion, after which a shall be taken to decide whether the proposition shall be mitted for decision by letter-ballot to all the members entitle

If decided in the affirmative the Secretary, within three hs from the time the vote of the Association is taken on measure, shall send by mail to each member a blank ballot, copy of the proposed recommendation, with a report—to be ved by the Executive Committee—of the discussion thereon. ballot to be filled up, signed and remailed to the Secretary, shall count all the ballots received within sixty days from date that they were sent to members, and he shall then unce the vote in such manner as the Executive Committee prescribe. Any recommendation securing two-thirds of the cast shall be adopted by the Association.

EC. 2. All reports, resolutions and recommendations involv- he use, or proposed use, by railroad companies of any device ocess which forms the subject-matter of any existing patent, first be submitted to the Executive Committee, and shall be itted to the Association only by the Executive Committee.

ARTICLE X.

ANNUAL CONTRIBUTIONS.

EC. 1. Every member will be subject to the payment of al dues, to be assessed at each annual meeting, to defray the ssary expenses of the Association, provided that no assess- shall exceed eight dollars. Each Representative Member pay in addition to his own dues so assessed the same amount ach additional vote to which he is entitled.

uch dues shall be payable when the amount thereof is unced by the President at each annual meeting, and no ber who is one year in arrears shall be entitled to a voice in Association. The name of any member who is three years in rs for dues, may be struck from the list of members at the etion of the Executive Committee.

ARTICLE XI.

AMENDMENTS.

EC. 1. This Constitution may be amended at any regular ing by a two-third vote of the members present, *provided* written notice of the proposed amendment has been given at vious meeting at least six months before.

BY-LAWS.

TIME OF MEETING.

I. The regular meeting of the Association shall be annually on the second Tuesday in June.

HOURS OF SESSION.

II. The regular hours of session shall be from 10 o'clock to 2 o'clock P. M.

PLACE OF MEETINGS.

III. The place for holding the regular meetings of the ciation shall be determined by a majority of the mem present.

QUORUM.

IV. At any regular meeting of the Association fifteen or members entitled to a vote shall constitute a quorum.

ORDER OF BUSINESS.

V. The business of the meeting of this Association unless otherwise ordered by vote, proceed in the following o

1st. Calling the roll.
2d. Reading the minutes of the last meeting.
3d. Address by the President.
4th. Admission of new members.
5th. Reports of Secretary and Treasurer.
6th. Assessment and announcement of annual dues.
7th. Appointment of Nominating and other committee
8th. Election of Auditing Committee.
9th. Unfinished business.
10th. New business.
11th. Reports of committees.
12th. Reading and discussing questions propounded members.
13th. Routine and miscellaneous business.
14th. Election of officers.
15th. Adjournment.

GOVERNING THE CONDITION OF, AND REPAIRS TO, FREIGHT CARS FOR THE INTERCHANGE OF TRAFFIC.

I. The revision of the Rules of Interchange shall be the l order of business at 10 o'clock A. M. on the second day of nnual convention, unless otherwise ordered.

QUESTIONS FOR DISCUSSION, SPECIAL ORDER OF.

II. Unless otherwise ordered the discussion of questions pro- by members shall be the special order at 12 o'clock M. of lay of the annual meeting.

DECISIONS.

III. The votes of a majority of the members present shall be ed to decide any question, motion or resolution which shall before the Association, unless otherwise provided.

DISCUSSIONS.

X. No questions or discussions as to the regulation of , or the amount to be paid by the day, week or month, or umber of hours that shall constitute a day's work of em- es, shall be allowed at the meetings of this Association.

. No patentees or their agents shall be admitted in the ngs of the Association for the purpose of advocating the s of any patent or patentee, unless by unanimous consent.

I. No member shall speak more than twice in the discussion y question until all the other members who want to speak ave not been heard have spoken.

JAMES G. McCUEN.

James G. McCuen was born in Burlington, Vt., September
1845. At the age of thirteen he learned the trade of a machi
at Winooski, Vt., at which place he worked five years, educat
himself by going to night-school. At the age of eighteen
enlisted in the Thirteenth Regiment of Vermont Volunteers
serve nine months. At the expiration of his term of service
returned to Burlington, Vt., remaining there only a short ti
then went to St. Albans, Vt., where he worked in the mach
shops of the Central Vermont Railway until February, 18
From there he went to Terrace, Utah, as Division Ma
Mechanic on the Central Pacific Railroad, where he remai
nearly two years. From there he went to Virginia City, Neva
Comstock Lode, as Master Mechanic, remaining there until
spring of 1880, when he went to Guaymas, Mexico, as Ma
Mechanic of the Sonora Railway, which position he retai
until September 28, 1883, when he was appointed Master
chanic of the Chihuaha division of the Mexican Central Railw
Mr. McCuen remained with the Mexican Central Railway u
his appointment as Superintendent of Motive Power
Machinery of the Atlantic & Pacific Railroad Compa
October 5, 1885. He died of heart disease at the hotel in Al
querque, New Mexico, on the night of November 19, 1885.
was buried in San Francisco, beside his wife, who died in t
city some years previous. He left one daughter, about ten y
of age.

M. N. FORNEY.

HENRY F. SNYDER.

lenry F. Snyder was born at Selins Grove, Pennsylvania, ary 29, 1829. He was descended from the Hon. Simon er, one of the early Governors of Pennsylvania, and Henry s, who was prominent as one of the founders of the Mora- Church of America. From his honored ancestry he inher- hose qualities which were calculated to make him the suc- ul man of business and a respected and useful citizen. After ng secured the best education afforded by the schools of the ty in which he then lived, and possessing a natural taste and ude for mechanics, he chose the profession of mechanical neer. And in order to obtain a knowledge of his future pro- on, went to Williamsport in the year 1850 and entered the ine shops of Mr. John B. Hall, for whom he ever afterwards tained the warmest esteem. With an ambition to become er of his profession, and in order to secure the advantages of uction superior to those afforded him in Williamsport he equently went to New York and obtained employment in Allaire Works, where he made the most of his opportunity by ving at night in preparing himself for the position of ghtsman. He left the Allaire Works to accept the position raughtsman in the Erie City Iron Works, but finding the ate unfavorable to his health he became assistant draughts- in the Rogers Locomotive Works of Paterson, New Jersey. r an absence of several years he returned to Williamsport and nnection with two of his brothers, engaged in the manufac- of steam engines and general machinery, under the firm title nyder Brothers. For a number of years the business was ently successful, but the panic of 1873, combined with other s, resulted in the dissolution of the firm. He subsequently ved to Watsontown where he engaged in the manufacture of being mainly instrumental in the organization of the firm of ee, Snyder & Co., Limited, of whose business he had almost xclusive management down to the time of his death.

He was married to Miss E. Levantia Williard of Willi
port, May 1, 1855, and died at Watsontown, November 25, 1

Mr. Snyder was a man of superior artistic taste, which m
fested itself in the productions of his workshop. He also
sessed fine literary tastes, which, united with a genial disposi
rendered him a most agreeable companion. His death was
cerely mourned by a large circle of acquaintances both on acc
of his usefulness as a citizen and the high personal esteem
which he was held.

For years he had been a great sufferer from impaired he
which he bore with remarkable fortitude.

He became a member of the Master Car-Builders' Associa
in 1861, and was also at the time of his death a member of
American Society of Mechanical Engineers, in the proceeding
whose meetings he took great interest. His impaired health
the arduous duties of his business prevented him from active
ticipation in the meetings of these societies for which both
inclination and his abilities would have rendered him
qualified.

S. W. MURRAY

LIST OF SUBJECTS,

TH THE COMMITTEES APPOINTED TO REPORT THEREON AT THE ANNUAL CONVENTION OF THE MASTER CAR-BUILDERS' ASSOCIATION, TO BE HELD IN MINNEAPOLIS, JUNE 14, 1887.

1. *Standards and Appliances for the Safety of Trainmen.*—1884, the committee on this subject was appointed in accordce with the following resolution:

"*Resolved*, That a committee be appointed to prepare a ular calling the attention of railroad managers to the standards the appliances for the safety of trainmen, which have been ommended by this Association, and that this committee be ed to do everything in its power to secure their adoption."

At the Convention held in 1885, the committee was discharged, a resolution was passed to have a new one appointed. The owing are the names of this committee, which was continued 886: H. Hegewisch, United States Rolling-Stock Company, 35 Wall street, New York; John Kirby, Lake Shore & higan Southern, Cleveland, O.; M. N. Forney, No. 23 Murray et, New York.

2. *British and Continental Practice in Matters of Interest to Master Car-Builders' Association.*—R. H. Soule, New York, e Erie & Western, Buffalo, N. Y.; Wm. McWood, Grand nk, Montreal, Canada; Henry A. Whitney, Intercolonial, ncton, N. B.

3. *Automatic Freight-Car Brakes.*—Godfrey W. Rhodes, icago, Burlington & Quincy, Aurora, Ill.; Geo. Hackney, hison, Topeka & Santa Fé, Topeka, Kan.; B. Welch, Central ific, Sacramento, Cal.; John S. Lentz, Pennsylvania & New rk Canal & Railroad Company, Packerton, Pa.; W. T. Hild-, Harrisburg Car Co., Harrisburg, Pa.

4. *The Comparative Advantages of the Two Methods of Conucting Freight-Cars, with and without Platform Timbers or d Sills projecting from the End of the Car.*—This committee s continued, its scope enlarged, and it was empowered to sub- plans giving two standards for the end floor-framing of ight-cars. E. B. Wall, Pittsburgh, Cincinnati & St. Louis, lumbus, Ohio; B. K. Verbryck, Chicago, Rock Island & Pacific, icago, Ill.; Geo. W. Cushing, Northern Pacific, St. Paul, nn; W. H. Harrison, Baltimore & Ohio Railroad, Baltimore, .; W. F. Turreff, Cleveland, Col., Cinn. & Ind., Cleveland, io.

5. *Maximum Outside Dimensions of Freight-Cars.*—John Levan, Pennsylvania Railroad, Altoona, Pa.; C. A. Smith, Uni Trunk Line, 267 Fourth street, Jersey City, N. J.; George Watrous, Detroit, Lansing & Northern Railroad, Ionia, Mich.

6. *Standard Draw-Gear for Non-Automatic Couplers.*— B. Haupt, Norfolk & Western Railroad, Roanoke, Va.; J. Mileham, New York, Lake Erie & Western Railroad, 234 Th street, Jersey City, N. J.; Allen Cooke, Chicago & East Illinois Railroad, Danville, Ill.

7. *Appliances to Prevent the Slipping of Wheels, both P senger and Freight.*—J. W. Marden, Fitchburg Railroad, Bost Mass.; E. W. Grieves, Baltimore & Ohio Railroad, Baltimo Md.; W. H. Day, Wilmington, Columbus & Augusta Railro Florence, S. C.

8. *Standard Freight-Car Truck and Axle for Cars of* 60,(*lbs. Capacity.*—This committee is instructed to suggest mea for having the axles made uniform in size. Joseph Wood, Pe sylvania Company, Fort Wayne, Ind.; H. Roberts, Grand Tru & Detroit, Grand Haven & Milwaukee Railways, Detroit, Mic M. M. Martin, Wabash, St. Louis & Pacific, Decatur, Ill.; R. Blackall, Delaware & Hudson Canal Co., Albany, N. Y.; W. Scott, Chicago & North Western Railroad, Chicago, Ill.

9. *Standard Sizes of Lumber for Freight-Cars.*—Willi Forsyth, Chicago, Burlington & Quincy Railroad, Aurora, I Frank J. Hecker, Peninsular Car Works, Detroit, Mich.; W. Davenport, Erie Car Works, Erie, Pa.

10. *The Best Form and Construction of Car-Roofs.*—J. McIlwain, Grand Trunk Railway (Great Western Divisio London, Ont.; Samuel Irwin, Missouri Pacific Railroad, Seda Mo.; L. Packard, New York Central & Hudson River Railro West Albany, N. Y.

11. *Subjects to be Reported at the Next Annual Convent for Investigation and Discussion at the Succeeding Conventi* —J. W. Marden, Fitchburg Railroad, Boston, Mass.; John Cloud, Pennsylvania Railroad, Altoona, Pa.; Thomas A. Biss New York Central Sleeping Car Company, Buffalo, N. Y.

12. *Committee of Arrangements for the Next Annual C vention.*—George W. Cushing, Northern Pacific Railroad, Paul, Minn.; George F. Wilson, Minneapolis & St. Louis R road, Minneapolis, Minn.

LIST OF OFFICERS AND MEMBERS

OF THE

ASTER CAR-BUILDERS' ASSOCIATION.

OFFICERS FOR 1886-'87.

PRESIDENT.

K. VERBRYCK, Chicago, Rock Island & Pacific Railroad, Chicago, Ill.

VICE-PRESIDENTS.

LLIAM McWOOD, Grand Trunk Railway, Montreal, Canada.
IN W. CLOUD, Pennsylvania Railroad, Altoona, Pa.
W. GRIEVES, Baltimore & Ohio Railroad, Baltimore, Md.

TREASURER.

IN KIRBY, Lake Shore & Michigan Southern Railroad, Cleveland, Ohio.

EXECUTIVE MEMBERS.

(*Constituting, with the foregoing officers, the Executive Committee.*)

OHN S. LENTZ, Lehigh Valley Railroad, Packerton, Pa.
M. WILDER, New York, Lake Erie & Western Railroad, Susquehanna, Pa.
C. BLACKALL, Delaware & Hudson Canal Co., Albany, N. Y.
D. ADAMS, Boston & Albany Railroad, Alston, Mass.
B. WALL, Pittsburgh, Cincinnati & St. Louis Railroad, Columbus, Ohio.
PACKARD, N. Y. Central & Hudson River Railroad, West Albany, N. Y.

SECRETARY.

N. FORNEY, 23 Murray Street, New York City.

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* Term of office expires June, 1887.
† Term of office expires June, 1888.

LIST OF ACTIVE MEMBERS.

Date of becoming an active member.	Name.	Railroad Company.	Address.
1883.	Adams, J. L.,	Chicago & Atlantic,	Huntingdon, I
1886.	Allen, A. B.,	South Florida,	Sanford, Fla.
1867.	Baker, David H.,	Pennsylvania,	Jersey City, N
1883.	Barber, J. C.,	Northern Pacific,	Brainerd, Min
1884.	Billings, Samuel D.,	Norwich & Worcester,	Norwich, Con
1881.	Bissell, Thomas A.,	Barney & Smith Manufacturing Co.,	Dayton, O.
1885.	Blackwell, Charles,	Union Pacific,	Butte, Mon.,
1880.	Blackwell, K. W.,	Manufacturer, Canal and Condé sts.,	Montreal, Can
1885.	Bradley, Osgood,	Bradley Car Works,	Worcester, Ma
1873.	Bray, F. O.,	Lake Shore & Michigan Southern,	Adrian, Mich.
1883.	Briggs, R. H.,	Ches., Ohio & Southwestern,	Paducah, Ky.
1884.	Brownell, F. G.,	Burlington & Lamoille,	Burlington, V
1886.	Butler, C. J.,	Fall Brook Coal Co.,	Corning, N. Y
1886.	Cade, James R.,	Southern Pacific Co.,	Harrisburg, T
1882.	Carter, E. D.,	Terre Haute & Indianapolis,	Terre Haute, I
1883.	Carlton, Howard,	Baltimore & Ohio,	Newark, O.
1883.	Cassidy, Thomas,	Cincinnati, Ind., St. Louis & Chicago,	Cleves, O.
1884.	Chamberlain, Eugene,	New York Central & Hudson River,	East Buffalo, I
1883.	Chamberlain, J. T.,	Boston & Albany,	Alston, Mass.
1871.	Chamberlain, W. E.,	Providence & Worcester,	Providence, R
1886.	Coghlan, John,	Boston, Revere Beach & Lynn,	East Boston, M
1868.	Coon, Robert V.,	Troy & Boston,	Troy, N. Y.
1879.	Cooper, H. L.,	Lake Erie & Western,	Lima, O.
1886.	Cowan, John,	Allegheny Valley,	Verona, Pa.
1873.	Davenport, W. R.,	Erie Car Works,	Erie, Pa.
1885.	Day, W. H.,	Wilmington, Columbia & Augusta,	Florence, S. C
1886.	Davis, James A.,	Napanee, Tamworth & Quebec,	Deseronto, On
1871.	Davis, Willis,	Green Line,	Elizabeth, N.
1868.	Demarest, G. W.,	Northern Central,	Baltimore, Md
1873.	Denver, James.	New York, New Haven & Hartford,	New Haven, C
1884.	Divine, John F.,	Wilmington & Weldon,	Wilmington, N
1878.	Donaby, R.,	New York Central & Hudson River,	Niagara Falls,
1882.	Doran, J. E.,	Boston & Albany,	East Albany, I
1886.	Dryden, C. P.,	Union Tank Line,	Cleveland, O.
1883.	Dunbar, Oliver P.,	Wheeling & Lake Erie,	Norwalk, O.
1883.	Duncan, T. G.,	Cincinnati, Washington & Baltimore,	Zaleski, O.
1885.	Ellis, E. W.,	Swift's Refrigerator Transp. Co.,	Chicago, Ill.
1883.	Ensign, S. P.,	Ensign Manufacturing Co.,	Lime Rock, C
1886.	Ettenger, Geo. W.,	Chesapeake & Ohio,	Richmond, Va
1884.	Finlay, L.,	Hot Springs,	Malvern, Ark.
1886.	Flaharhan, W. M.,	Pittsburgh & Western,	Allegheny, Pa
1877.	Fletcher, John B.,	National Car Co.,	St. Albans, Vt
1867.	Ford, M. P.,	Pittsburgh, Cincinnati & St. Louis,	Columbus, O.
1886.	Foster, W. A.,	Fall Brook Coal Co.,	Corning, N. Y
1885.	Galloway, A.,	Cleveland & Marietta,	Cambridge, O

Name.	Railroad Company.	Address.
y, C. E.,	Dry Dock, East Broadway & Battery,	Station T., New York.
se, J. Taylor,	Harlan & Hollingsworth Co.,	Wilmington, Del.
ge, N. M.,	Danbury & Norwalk,	Danbury, Conn.
cken, E. G.,	Savannah, Florida & Western,	Savannah, Ga.
am, Charles,	Delaware, Lackawanna & Western,	Kingston, Pa.
nling, G. H.,	South Carolina,	Charleston, S. C.
nland, Thomas,	Lake Erie & Western,	Lima, O.
ves, E. W.,	Baltimore & Ohio,	Baltimore, Md.
ith, Fred. B.,	Delaware, Lackawanna & Western,	Buffalo, N. Y.
ith, S.,	Cincinnati, Ind., St. Louis & Chicago,	Lafayette, Ind.
kett, Geo.,	Central Div., Phila. & Reading,	Elizabeth, N. J.
, John K.,	Boston & Lowell,	Nashua, N. H.
is, Geo. H.,	Pittsburgh, Cincinnati & St. Louis,	Columbus, O.
ker, Frank J.,	Peninsular Car Works,	Detroit, Mich.
ewisch, A.,	U. S. Rolling Stock Co., 35 Wall st.,	New York City.
rup, W. T.,	Harrisburg Car Co.,	Harrisburg, Pa.
C. H.,	Sodus Bay & Southern,	Sodus Point, N. Y.
John,	St. Paul & Duluth,	St. Paul, Minn.
ge, John,	Missouri Pacific,	St. Louis, Mo.
ister, Jas. D.,	Florida Southern,	Palatka, Fla.
kins, D. A.,	Manufacturer, 113 Liberty street,	New York City.
ard, Frank,	Northern Pacific,	Brainerd, Minn.
t, Thomas B.,	P. & E. Div., Pennsylvania,	Renovo, Pa.
ter, David W.,	Providence & Worcester,	Valley Falls, R. I.
a, Samuel,	Missouri Pacific,	Sedalia, Mo.
son, Job H.,	Jackson & Sharp Co.,	Wilmington, Del.
son, F.,	Buffalo Car Manufacturing Co.,	Buffalo, N. Y.
h, Isaac N.,	Keith Manufacturing Co.,	Sagamore, Mass.
ey, John M.,	Alabama Great Southern,	Chattanooga, Tenn.
yon, Wm.,	Western & Atlantic,	Atlanta, Ga.
Israel,	Pittsburgh, Fort Wayne & Chicago,	Fort Wayne, Ind.
hton, James T.,	Jackson & Sharp Co.,	Wilmington, Del.
an, John P.,	Pennsylvania,	Altoona, Pa.
tner, J.,	Boston & Providence,	Boston, Mass.
ier, B. F.,	Jones Car Manufacturing Co.,	Schenectady, N. Y.
hews, L. G.,	Pullman's Palace Car Co.,	Chicago, Ill.
allan, J. T.,	Evansville & Terre Haute,	Evansville, Ind.
arty, H. C.,	P. & E. Div., Pennsylvania,	Williamsport, Pa.
evitt, B.,	Chicago West Div.,	Chicago, Ill.
regor, James,	Michigan Car Co.,	Detroit, Mich.
herson, Reuben,	Flint & Pere Marquette,	East Saginaw, Mich.
Wood, Wm.,	Grand Trunk,	Montreal, Canada.
simer, D. M.,	P. & E. Div., Pennsylvania,	Renovo, Pa.
ham, J. N.,	New York, Lake Erie & Western,	Jersey City, N. J.
en, Thos.,	New York City & Northern,	New York City.
er, G. W.,	Buffalo Car Co.,	Buffalo, N. Y.

Date of becoming an active member.	Name.	Railroad Company.	Address.
1881	Minshull, E.,	New York. Ontario & Western,	Middletown, N.
1871	Morgan, W. A.,	Norfolk & Western,	Lynchburg, Va.
1885	Mosier, John W.,	Louisville & Nashville,	Louisville, Ky.
1883	Munsell, T. H.,	Wagner Sleeping Car Co.,	Buffalo, N. Y.
1882	Murray, S. W.,	Milton Car Works,	Milton, Pa.
1885	Nelson, E. D.,	P. & E. Div., Pennsylvania,	Williamsport, P
1877	Ortton, John,	New York Central & Hudson River,	West Albany, N
1881	Packard, L,.	New York Central & Hudson River,	West Albany, N
1879	Peabody, D. B.,	Illinois Midland,	Paris, Ill.
1885	Perry, H. M.,	Atchison, Topeka & Santa Fé,	Topeka, Kan.
1872	Phelps, Bradley N.,	Fourth Avenue City,	Tremont P.O., N
1880	Potts, Robert,	Michigan Central,	St. Thomas, Can
1883	Ramseyer, Wm. H.,	Sioux City & Pacific,	Missouri Valley
1883	Richardson, John,	Cincinnati Southern,	Ludlow, Ky.
1886	Rigby, S. S.,	Cincinnati, Jackson & Mackinaw,	Van Wert, O.
1882	Riley, Patrick,	New York, Ontario & Western,	Oswego, N. Y.
1873	Robson, A. C.,	Lake Shore & Michigan Southern,	Buffalo, N. Y.
1886	Rutherford, Wm.,	Florida Southern,	Palatka, Fla.
1883	Salveter, T. C.,	St. Charles Car Co.,	St. Charles, Mo.
1885	Schlacks, H.,	Illinois Central,	Chicago, Ill.
1868	Scoville, C. F.,	Wells & French Co.,	Chicago, Ill.
1883	Seevers, T. L.,	Central Iowa,	Marshalltown, I
1887	Selby, W. H.	St. Louis, Arkansas & Texas,	Tyler, Texas.
1884	Sheldon, Geo. O.,	New York Central & Hudson River,	New York City.
1885	Sheppard, Frank,	Pennsylvania,	Altoona, Pa.
1884	Shoemaker, S B.,	Swissvale Car Co. (Limited),	Pittsburgh, Pa.
1885	Short, Wm. A.,	Ogdensburg & Lake Champlain,	Malone, N. Y.
1884	Skinner, J. R.,	Delaware & Hudson Canal Co.,	Oneonta, N. Y.
1870	Smith, C. A.,	Union Tank Line,	Jersey City, N.
1880	Smith, Peter,	New York Central & Hudson River,	East Rochester,
1881	Smith, W. O.,	Lake Shore & Michigan Southern,	Norwalk, O.
1883	Steinbrenner, A. G.,	Cleveland, Columbus, Cinn. & Ind.,	Cleveland, O.
1873	Stewart, T. B.,	Hartford & Wethersfield Horse,	Hartford, Conn.
1886	Stinard, F. A.,	New York & Greenwood Lake,	Pompton Junct
1886	Stone, W. A.,	Louisville, Evansville & St. Louis,	Evansville, Ind.
1886	Sutherland, T.,	Chicago & Grand Trunk,	Detroit, Mich.
1879	Sweeney, John,	New Haven & Northampton,	New Haven, Co
1880	Taylor, Joseph,	Michigan Car Co.,	Detroit, Mich.
1884	Traver, James J.,	Adirondack,	Saratoga Spring
1886	Twyman, A.,	Pullman's Palace Car Co.,	Pullman, Ill.
1882	Van Buskirk, W. G.,		Fishkill Landin
1880	Van Vechten, J.,	New York, Lake Erie & Western,	Port Jervis, N.
1883	Voorhees. John,	Indianapolis Car & Manufacturing Co.,	Indianapolis, In
1885	Wagner, J. L.,	Erie & Pacific Despatch Co .	Terre Haute, In
1885	Wallis, F. M.,	Phila., Wilmington & Baltimore,	Philadelphia, P
1885	Wanless, Wm.,	Chicago & Grand Trunk,	Port Huron. Mi
1871	Webster, H. A.,	New York Elevated,	New York City.

Name.	Railroad Company.	Address.
ich, Benj.,	Central Pacific,	Sacramento, Cal.
ite, David,	Intercolonial,	Moncton, N. B.
itworth, John S.,	Norfolk Southern,	Norfolk, Va.
kes, J. H.,	Merchants' Despatch Transp. Co.,	Rochester, N. Y.
der, F. M.,		Binghamton, N. Y.
der, Milton,	New York, Lake Erie & Western,	Buffalo, N. Y.
lard, Daniel,	Minn., Sault Ste. Marie & Atlantic,	Turtle Lake, Wis.
son, J. B.,	Detroit, Mackinac & Marquette,	Marquette, Mich.
slow, J. M.,	Mexican National,	City of Mexico.
lfrath, W. H.,	New York Central & Hudson River,	New York City.

LIST OF REPRESENTATIVE MEMBERS.

Name.	Railroad Company.	No. of Cars Owned.	Address.
ams, F. D.,	Boston & Albany,	7,000	Alston, Mass.
es, La Mott,	Beech Creek,	750	Jersey Shore, Pa.
nbruster, Joseph,	East Tenn., Virginia & Georgia,	4,327	Knoxville, Tenn.
ery, E. A.,	Des Moines & Fort Dodge,	290	Grand Junction, Ia.
lentine, D. W.,	Seaboard & Roanoke,	400	Portsmouth, Va.
nes, H. A.,	Wisconsin Cent'l Associated Lines,	3,183	Stevens Point, Wis.
r. J. N.,	Chicago, Milwaukee & St. Paul,	20,498	Milwaukee, Wis.
ckall, Robert C.,	Delaware & Hudson Canal Co.,	11,000	Albany, N. Y.
an, H. S.,	Chicago, Burlington & Northern,	1,701	La Crosse, Wis.
hanan, William,	New York Central & Hudson River; New York, West Shore & Buffalo,	41,000	New York.
hnell, R. W.,	Bur., Cedar Rapids & Northern,	4,307	Cedar Rapids, Ia.
pman, T. L.,	Chesapeake & Ohio,	6,719	Richmond, Va.
ud, John W.,	Pennsylvania; Northern Central; West Jersey; Philadelphia, Wilmington & Baltimore; Alexandria & Fredericksburg, and Baltimore & Potomac,	47,711	Altoona, Pa.
ke, Allen,	Chicago & Eastern Illinois,	4,877	Danville, Ill.
lter, J. P.,	Ohio & Mississippi,	2,501	Aurora, Ind.
hing, G. W.,	Northern Pacific,	9,553	St. Paul, Minn.
terer, D. H.,	Atlantic & Pacific,	1,303	Albuquerque, N. M.
is, W. C.,	New York, Susque. & Western,	1,700	Wortendyke, N. J.
syth, William,	Chicago, Burlington & Quincy,	19,242	Aurora, Ill.
ckney, Clem.,	Union Pacific,	12,299	Omaha, Neb.
ckney, George,	Atchison, Topeka & Santa Fé,	10,704	Topeka, Kan.
ines, S. W.,	Pittsburgh & Lake Erie,	2,122	Pittsburgh, Pa.
rrison, W. H.,	Baltimore & Ohio,	22,000	Baltimore, Md.

Date of becoming a representative member.	Name.	Railroad Company.	No. of Cars Owned.	Address.
1886.	Hatch, William B.,	Central Vermont,	3,072	St. Albans, Vt.
1884.	Haselton, George H.,	Rome, Watertown & Ogdensburg,	1,478	Oswego, N. Y.
1885.	Haupt, S. B.,	Norfolk & Western,	3,818	Roanoke, Va.
1884.	Hills, John,	St. Paul & Duluth,	1,501	St. Paul, Minn.
1884.	Hitchcock, Robert,	Connecticut River,	952	Springfield, Mas
1883.	Huidekoper, H. S.,	Western Car Company,	1,000	New York.
1886.	Johns, C. T.,	Valley,	889	Cleveland, O.
1883.	Keeler, Sanford,	Flint & Pere Marquette,	2,278	East Saginaw, M
1882.	Kenison, Charles H.,	Maine Central,	1,991	Augusta, Me.
1883.	Kirby, John,	Lake Shore & Michigan Southern,	17,115	Cleveland, O.
1884.	Lander, James N.,	Old Colony,	2,348	Boston, Mass.
1882.	Lentz, John S.,	Penn. & N. Y. Canal & R. R. Co,	332	Packerton, Pa.
1882.	Lyons, Henry D.,	Marq., Houghton & Ontonagon,	3,000	Marquette, Mich
1883.	Mackenzie, John,	New York, Chicago & St. Louis,	7,244	Cleveland, O.
1882.	Marden, J. W.,	Fitchburg,	3,571	Boston, Mass.
1886.	Martin, M. M.,	Wabash, St. Louis & Pacific,	15,322	Decatur, Ill.
1885.	McCool, D.,	Detroit, Mackinac & Marquette,	1,112	Marquette, Mich
1882.	McCrum, J. S.,	Kansas City, Fort Scott & Gulf; Kansas City, Springfield & Memphis, and Kansas City, Clinton & Springfield,	3,804	Kansas City, Mo
1882.	McGee, James,	Houston & Texas Central,	2,145	Houston, Texas.
1884.	McIlwain, J. D.,	Grand Trunk (Great West. Div.),	5,351	London, Ont.
1883.	McKenna, Robert,	Del., Lackawanna & Western,	24,000	Scranton, Pa.
1882.	Miller, Robert,	Michigan Central.	12,000	Detroit, Mich.
1884.	Mills, C. W.,	Rochester & Pittsburgh,	4,029	Rochester, N. Y.
1886.	Palmer, A. G.,	Fall Brook Coal Company,	700	Jersey Shore, Pa
1884.	Pickering, Sidney,	Louisville, Evansville & St. Louis,	1,032	Evansville, Ind.
1884.	Pratt, Elias E.,	New York & New England,	3,959	Boston, Mass.
1885.	Preston, H. L.,	Chic., St. Paul, Minn. & Omaha,	6,367	St. Paul, Minn.
1884.	Reilly, Patrick,	Peoria, Decatur & Evansville,	1,668	Mattoon, Ill.
1885.	Rhodes, Godfrey W.,	Burlington & Mo. River, in Neb.; St. Louis, Keokuk & North Western; Chicago, Burlington & Kansas City; Hannibal & St. Joseph; Kansas City, St. Joseph & Council Bluffs, and Chicago & Iowa,	7,849	Aurora, Ill.
1882.	Richardson, David C.,	Boston & Maine,	5,127	Lawrence, Mass.
1882.	Richardson, E.,	Shenango & Allegheny,	243	Greenville, Pa.
1884.	Richardson, Wm. J.,	Atlantic Avenue,	96	Brooklyn, N. Y.
1885.	Roberts, H.,	Chicago & Grand Trunk and Detroit, G'd Haven & Milwaukee,	3,960	Detroit, Mich.
1886.	Robertson, W. J.,	Central Vermont,	3,256	St. Albans, Vt.
1882.	Rommel, George,	Wilmington & Northern,	155	Coatesville, Pa.

NAME.	RAILROAD COMPANY.	NO. OF CARS OWNED.	ADDRESS.
t, George M.,	Chicago, St. Louis & Western,	2,000	Chicago, Ill.
W. A.,	Chicago & Northwestern,	21,621	Chicago, Ill.
and, N.,	Housatonic,	885	Falls Village, Conn.
W. B.,	Illinois Central,	9,800	Chicago, Ill.
Richard H.,	New York, Lake Erie & Western; New York, Pennsylvania & Ohio; Buffalo & Southwestern and Tioga,	36,812	Buffalo, N. Y.
t, T. M. R.,	Mobile & Ohio,	1,353	Mobile, Ala.
r, G. M.,	Cleveland, Akron & Columbus,	762	Mt. Vernon, O.
Henry D.,	Southern Central,	375	Auburn, N. Y.
send, Joseph.	Chicago & Alton,	6,500	Bloomington, Ill.
nam, Wm. H.,	Rich., Fred'ksburg & Potomac,	141	Richmond, Va
ff, W. F.,	Cleve., Columbus, Cin. & Ind.; Ind. & St. Louis; and Dayton & Union,	8,000	Cleveland, O.
Allen,	Buffalo, N. Y. & Philadelphia,	6,000	Buffalo, N. Y.
yck, B. K.,	Chicago, Rock Island & Pacific,	8 081	Chicago, Ill.
R. D.,	Richmond & Danville,	3,833	Richmond, Va.
E. B.,	Pittsburgh, Cin. & St. Louis,	10,820	Columbus, O.
, Herbert,	Grand Trunk,	12,000	Montreal, Canada.
en, B.,	Indiana, Bloomington & West.,	4,018	Indianapolis, Ind.
ous, George C.,	Detroit, Lansing & Northern, and Chicago & West Michigan	2,656	Ionia, Mich.
ney, Henry A.,	Intercolonial, of Canada,	6,000	Moncton, N. B.
e, Caspar,	Cumberland Valley,	442	Chambersburg, Pa.
ur, Rollin H.,	Lehigh Valley,	24,338	Bethlehem, Pa.
n, George F.,	Minneapolis & St. Louis,	2,060	Minneapolis, Minn.
, Joseph,	Pennsylvania Company,	23,606	Fort Wayne, Ind.
	Total.....	580,054	

ASSOCIATE MEMBERS.

AME.	ADDRESS.
Forney,	23 Murray street, New York.
Raymond,	Honore Building, Chicago, Ill.

INDEX.

A

Acceptance of Code of Rules, 154.
Account of receipts and expenses, 8–12.
Active members, vote of, 106, 107, 158.
Adams, F. D., elected Executive member, 178.
Adams, F. D., remarks by, 13, 16, 17, 18, 19, 37, 39, 46, 47, 49, 50, 52, 53, 56, 60, 61, 62, 68, 73, 106, 107, 112, 116, 119, 120, 121, 122, 125, 128, 132, 135, 138, 139, 145, 147, 149, 150, 153, 154, 158, 168, 172, 173, 175, 176, 179.
Adams, Mr., modesty of, 70.
Address of President, 4–6.
Adjournment, 121.
Adrian, Mich., 4.
Afternoon session, 40, 95, 163.
Air-brake, 167–170; pressure, 169.
Air, pressure of, in brakes, 163.
Air receivers, 168.
Altoona, Pa., 4.
Amendment to Article 6 of By-laws, 19.
Amendment to Constitution, 7, 133, 158, 163, 179; announcement of, 163; to increase dues, 13, 14; with reference to appointment of committees, 14, 15.
Amendments to motion to adopt amendment to Constitution, 16.
Ames coupler, 77, 80, 175; engraving of, 81.
Ames draw-bar, 37, 40, 49, 173, 174.
Announcement of amendment to the Constitution, 163.
Annual Convention for 1887, see last page of cover.
Annual dues, announcement of, 57.
Annular boss, 23.
Appeal, right of, 157.
Appliances to prevent the slipping of wheels, both passenger and freight, report on, 164–167.
Arbitration, 155, 157.
Arbitration Committee, 155, 156.
Arch bars, 24, 53; for standard truck, 53.
Archer coupler, 77, 80; engraving of, 81.
Armour, refrigerator cars, 121.
Arrears of dues, 6.
Assessment of dues, 12.
Atmospheric brakes, 167.
Attachment of draw-bars, 226.
Auditing Committee, election of, 13; report of, 136, 184.
Automatic air-brake, 167.
Automatic brakes, 5; report on, 25.
Automatic couplers, 5, 36, 38; discussion of on, 172–177; report on, 74–94.
Automatic cut-off valve, 166.
Automatic draw-bars, action of Executive mittee in relation to, 167.
Automatic governor, 167.
Auxiliary reservoir, 166.
Axle, defective, 99, 129; destruction of, 1 cars of 60,000 lbs. capacity, 160; standar
Axle gauges, standard, 218.
Axle work, bills for, 124, 133, 134, 135.
Axles, bent or with journals cut, 97; bills defects of, 97, 111, 113; foreign, 142; pr 126–128; removed, 129; wheels must b to, 102; with small journals, 97.

B

Balance in Treasury, 7.
Ballot, declaration of, 178.
Baltimore & Ohio Railroad, 73, 128; height o bars, 38; st ndard truck, 53; statemen end platforms, 57; wheel adopted by, 6
Baltimore & Potomac Railroad, 166.
Barnes coupler, engraving of, 81.
Barnett, Mr., invitation to, 61; remarks of,
Beam for dead-blocks, 33.
Betterments, 103, 129, 130, 131, 132, 133, 145.
Bevel of wheel, 59, 60.
Bill for wheels and axles, form of, 144.
Bills for wheel and axle work, 99, 101, 123, 135, 137, 138; discussion of, 135–141; f 100; rendering of, 152.
Bills for work, 151.
Bills for work done, 104.
Billing work, 104.
Billing work done, 150.
Bird coupler, engraving of, 82.
Bissell, Thomas A,, remarks of, 62.
Blackall, Robert C., remarks of, 65, 66, 114, 132, 147, 150, 162, 163, 164, 168, 174, 175,
Bodies, car, 159; defects of, 98, 117.
Body-bolster, 102, 145.
Body of car, destruction of, 102, 103, 145, 15
Bolster strap, 24.
Bolster, swing and rigid, 19.
Bolts and nuts, standard, 223.
Bolts for standard truck, 53.
Bolts, price of, 151.
Boring wheels, 219.

ar, 23.

Albany Railroad, 41, 71, 122; height of
, 39.
ler, engraving of, 82.
laine Railroad, 41.
ces for, 103, 146.
r, prices for, 151.
, remarks of, 70, 121, 123, 124, 138, 140,
, 148, 152, 153, 154, 155, 157, 158, 179.
acked, 101, 141.
ders, 166, 169.
s, 167, 168.
age, 170.
s, standard position of, 232.
letter ballot on, 181–184; motion to sub-
istie to letter-ballot, 72; standard, 219.
, 121; discussion on, 70–74; letter-ballot
motion to submit to letter-ballot, 71.
, 233.
their maintenance, 167; automatic, 5;
tic, report on, 25; automatic, tests of, 5;
rder, 97, 117; release of, 169.
ls, defective, 97; in bad order, 117.
al bearings, price of, 151.
rn, 121.
I., remarks of, 40.
Continental practice, report on, 24.
ieces, 141.
eels, 96.
ler, engraving of, 82.
Wm., 37, 38, 122, 164.
53; trial of couplers at, 75.
gs, 51.
Iowa, 25.
), 261; amendment to Article 6, 19.

C

car, 113.
ct, 98, 130, 131, 132, 145, 151.
ward, communication from, 70; remarks
6, 132, 149.
159; destroyed, 149; destruction of,

s, circular relating to trial of, 185–187.
ine elevator, 154.
ors, 77.
78.
ging to private parties or corporations,
0; damaged or destroyed on private
04, 152, 153; defects of, 108, 117; deliv-
d receiving of, 96, 107; depreciation of,
reign, 101; foreign, repairs of, 145;
report on dimensions of, 163; height of,
ed, 104, 152; must be delivered in good
52; number represented, 6; numbering
tering, 104; prices for, 103, 146–150; re-
g of, 102, 103; refusal of, 96; repairs of,
; represented, 7; 25-ton, 146; prices

Car-wheels, standard distance between, 218.
Cast-iron, price of, 151.
Cast-steel, price of, 151.
Casting for dead-blocks, 32, 33.
Catches, 76.
Causes of removal of wheel, 136.
Central Pacific Railroad, 45.
Central Vermont Railroad, 122.
Centre plate, 20, 22, 24.
Centre plates as standards, 53.
Centre pin, 22.
Centre sills, 145.
Chamberlain, J. T., remarks of, 18, 48, 71, 122, 125, 148.
Channel transomes, 19.
Check-chains, 234.
Chicago, Milwaukee & St. Paul Railway, 165.
Chill, 62.
Chill moulds, diameter of, 61, 67.
Chipped flanges, 109.
Chipped rim, 130.
Chipped treads, 67, 68, 110; determination of, 97.
Chipped treads and flanges, 99, 118, 119, 120.
Chipped wheels, 66, 96, 109.
Christie brake-shoe, 70, 71, 72, 73, 74; motion to submit to letter ballot, 72.
Circulars relating to letter ballots, 181–184.
Circumference of wheels, 142.
Classification of trucks, 150.
Cleveland, Columbus, Cincinnati & Indianapolis Railway, 153.
Cloud, J. W., elected Vice-President, 128; remarks of, 16, 17, 18, 23, 35, 40, 41, 43, 47, 48, 49, 51, 52, 53, 55, 56, 62, 65, 66, 68, 71, 73, 74, 105, 107, 108, 109, 110, 111, 112, 113, 114, 115, 123, 124, 125, 127, 128, 129, 131, 135, 136, 138, 142, 145, 146, 147, 148, 149, 150, 152, 155, 156, 158, 159, 161, 162, 163.
Coal cars, prices for, 103, 146.
Code of Rules, acceptance or rejection of, 105, 154; amendments to, 105; any company may become a party to, 104, 154; changes in, 154; for interchange of cars, discussion of, 107–163; governing the condition of, and repairs to, freight cars for the interchange of traffic, 239–249; of interchange, 95–163; revision of, 105, 159; to take effect, etc., 105, 159.
Codification of rules, 159; of rules of interchange, 5.
Collin brake-shoe, 70, 71, 73.
Columbus, O., 177
Committee, appointment of committees, to nominate officers, 13; to select place of next meeting, 13; on correspondence and resolutions, 13; on subjects for investigation and discussion, 13; election of Auditing Committee, 13; Arbitration, 155, 156; Auditing, report of, 36; to codify the rules on end platforms for freight cars, report of, 55; of interchange, 172; on couplers, report of, 74–94; on maximum outside dimensions of freight cars, 164; to nominate officers, report of, 95; on next place of meeting, 178; to prepare memoir of J. G. McCrum, 58; to pre-

pare memoir of H. F. Snyder, 58; on standard draw gear for non-automatic couplers, report of, 164; new one to be appointed, 164; on standard height of draw-bars for passenger cars, report of, 171, 172; on standard truck of 60,000 lbs. capacity, 51; on standard truck, report of, 19–23; on subjects, 159, 160; report of, 177; car coupler trials, 187; list of, 263, 264.
Condition of wheels, 136.
Cone of wheel, 13, 59–68.
Coning tread, 62, 65.
Connecticut River Railroad, 41, 121.
Constitution and By-Laws, 258–261.
Constitution, amendment to, 7, 133, 158, 163, 179; amendment of amendment to, 163; amendment of, to increase dues, 13, 14; amendment of, with reference to appointment of committees, 14, 15; provisions of relating to voting, 162; relating to vote by cars, 125.
Convention for 1887, see last page of cover.
Cooke, Allen, remarks of, 52.
Cooper, H. L., remarks of, 24.
Correspondence and resolutions, appointment of Committee on, 13; with Executive Committee, 155.
Couplers, Ames, engraving of, 81; Ames, report on, 77; Archer, engraving of, 81; Archer, report on, 77; Automatic, 5, 38; Automatic, discussion of report on, 172–177; Barnes, engraving of, 81; Bird, engraving of, 82; Boston, engraving of, 82; Brown, engraving of, 82; Cowell, engraving of, 83; Cowell, report on, 77; Curry, engraving of, 83; Curtis & Wood, engraving of, 83; danger of, 78; Dowling, engraving of, 84; Dowling, report on, 77; Emmet, engraving of, 84; Eureka, engraving of, 84; failure of, 78; Fitzgerald & Van Dorn, 85; fixed link, 77; Gifford, engraving of, 85; Gifford, report on, 77; Hien, engraving of, 85; Hien, report on, 77; Hilliard, engraving of, 86; Hills, engraving of, 86; Hitchcock, engraving of, 86; Hook, 77; Janney, 77, 80; Janney, engraving of, 87; Joo, engraving of, 87; Keiley, engraving of, 87; Lancaster, 88; Le Roux & Van Aarle, 88; loose link, 76; loose coupling bar, 77; Marks, engraving of, 88; Marks, report on, 77; McCree, engraving of, 89; McKeen, engraving of, 89; McKeen, report on, 77; Meadows & Mead, engraving of, 89; Miller, type of, 172, 173; Morgan, engraving of, 90; Muller, engraving of, 90; Murphy, engraving of, 90; non-automatic, report of and Committee on, 164; Payne, engraving of, 91; Perry, engraving of, 91; Perry, report on, 77; repairs to, 78; report on, 74–94; Russell's eccentric, engraving of, 91; safety of, 78; Simpson's engraving of, 92; Smillie, engraving of, 92; Stanford, engraving of, 92; tabulated description of, 77; Thurmond, engraving of, 93; Thurmond, report on, 77; Titus & Bessinger, 77; Titus & Bessinger, engraving of, 93; trial of, 5, 75; trials, committees on, 187; unco of, 78; United States, engraving of, 93; engraving of, 94; Whitman, engraving Williams, engraving of, 94.
Coupling cars, 33.
Cowell coupler, 77, 174, 175, 176; engraving o
Crack, in hub, 141; in plate, 141.
Cracked, brackets, 101, 141; hub, 101, 141; 101, 141; wheels, 96.
Cranks, 8.
Cross-tie timbers, 98, 117.
Cup washers, 33, 50.
Cylinder brake, 169; levers, 168.
Cylindrical tread, 61, 62.

D

Date, cast, 136; of application, of wheels, 142
Davenport's amendment, 67.
Davenport, W. R., remarks of, 51, 62, 63, 64, 6
Dead-block, form of, 37; hole in, 49; patent
Dead-blocks, double, danger of, 52; letter on, 181–184; report on, 28–35; single standard, 227, 231; thickness of, 49.
Dead-lever, 118, 166, 170.
Dead-woods, of no account, 51.
Decisions of Executive Committee, 154; shou published, 157; to be binding, 155, 156.
Defect cards, 98, 102, 104, 117, 118, 130, 131, 13 151; form of, 117.
Defective wheel, 126.
Defects, of axles, 97, 111; of axles, discussio 111–113; for which owners are responsib 99; for which owners are not responsible for which car may be refused, 111; of car of mounting wheels or axles, 97; of wheel
Deficit, 7.
Delaware, Lackawanna & Western Railroad,
Delivering and receiving cars, 96, 107.
Demarest, G. W., remarks by, 3, 26.
Depreciation, 146; of cars, 103.
Detroit, Lansing & Northern Railroad, 140, 17
Diameter of chill moulds, 67; of wheels, 60.
Diamond truck, 19.
Dictionary of terms, 237.
Discussion on brake-shoes, 70–74; of repo standard dead-blocks, 35–52; of rules of change, 179; on standard tread and flange,
Disputes under the rules, 154–157.
Dogs, 76.
Doors, 117; for box-cars, prices of, 151; defecti
Dowling coupler, 77, 80, 176; engraving of, 84
Draft-sills, or draft-timbers in bad order spliced, 117.
Draft-timbers, spliced, 117.
Draw-bars, attachment of, 226; in bad orde 117; discussion of, report on, 172–177; ballot on, 181–184; for passenger cars, of, report on, 171, 172; standard dimensio 227; standard height of, 225.
Draw-gear for non-automatic couplers, repo 164; standard, 225–227.

, 35.
s, standard capacity of, 227.
rs, 145.
cars, price for, 147.
ncement of, 57; arrears of, 6; assess-
12; collection of, 7; increase of, 14.

E

, 154.
rding gauge, 160.
Auditing Committee, 13; of officers, 177,

nterview with, 38.
pler, engraving of, 84.
rices of, 151.
es for freight cars, report on, 55; dis-
of, report on, 55-57.
set of brakes, 25.

6, 59, 68, 154, 167, 169.
nts, resolution relating to, 237, 238.
d Company, 18.
d, height of draw-bars, 38.
ler, engraving of, 84.
ommittee, 5, 14, 105, 173, 174, 175, 179;
disputes and questions under rules,
isions of, 105, 158; disputes to be re-
, 155, 156; to consider changes in Code
s, 154; meetings of, 155; minutes of
of, 184-216; question to, 167, 172;
n by, 70; members, election of, 178.
s, 7.
brake tests, 25; and receipts, 8-12; re-
of, 7.

F

l-block and draw-head, 35.
line cars, lettering and numbering of,

and flange, 69; Fig. 9, Ames coupler,
10, Archer coupler, 81; Fig. 11, Barnes
81; Fig. 12, Bird coupler, 82; Fig. 13,
coupler, 82; Fig. 14, Brown coupler,
15, Cowell coupler, 83; Fig. 16, Curry
83; Fig. 17, Curtis & Wood coupler,
18, Dowling coupler, 84; Fig. 19, Em-
pler, 84; Fig. 20, Eureka coupler, 84;
Fitzgerald & Van Dorn coupler, 85;
; Gifford coupler, 85; Fig. 23,
upler, 85; Fig. 24, Hilliard coup-
Fig. 25, Hill's coupler, 86; Fig. 26,
k coupler, 86; Fig. 27, Janney coup-
Fig. 28, Joo coupler, 87; Fig. 29, Kei-
ler, 87; Fig. 30, Lancaster coupler, 88;
Le Roux & Van Aarle coupler, 88;
Mark's coupler, 88; Fig. 33, McCree
89; Fig. 34, McKeen coupler, 89; Fig.
ows & Mead coupler, 89; Fig. 36, Mor-
pler, 90; Fig. 37, Muller coupler, 90;
Murphy coupler, 90; Fig. 39, Payne
91; Fig. 40, Perry coupler, 91; Fig. 41,
eccentric coupler, 91; Fig. 42, Simp-
son's coupler, 92; Fig. 43, Smillie coupler, 92; Fig. 44, Stamford coupler, 92; Fig. 45, Thurmond coupler, 92; Fig. 46, Titus & Bessinger coupler, 93; Fig. 47, United States coupler, 93; Fig. 48, Union coupler, 94; Fig. 49, Whitman coupler, 94; Fig. 50, Williams coupler, 94; Fig. 51, splice for sills coupler, 102; Fig. 52, limits of gauge of wheels, 114.

Final vote on rules, 159.

Fire, 98, 117.

Fitchburg Railroad, 123, 140, 174.

Fitzgerald & Van Dorn coupler, engraving of, 85.

Fixed link couplers, 77.

Flange and tread of wheel, engraving of, 19; motion to submit to letter ballot, 59, 62; amendment to motion to submit to letter ballot, 63, 66, 67; standard, 58, 216, 217; standard, discussion on, 58-68; of wheel, letter ballot on, 181-184.

Flanges, all kinds, 116; of car-wheels, standard distance between, 218; chipped, 96, 99, 109, 118, 119; distance between, 114, 115; flat, 110; measurement between, 113; sharp, 63, 64, 110; sharp, determination of, 97; thin, 110; thin, determination of, 97; worn, 96, 101, 109, 116, 141.

Flat car, prices for, 103, 140; flange, 110; spots, 96; 101, 108, 109, 110, 141; spots, determination of, 97; wheels, 96, 98, 118, 119.

Floating-lever, 170.

Foreign axles, 142.

Foreign cars, 121; care to, 107; oiling and packing of, 96; repairing and settling for, 142; repairing of, 101; repairs of, 102, 145.

Foreign lines, 151; road, 102, 145.

Forgings, price of, 151.

Form of bill for wheels and axles, 144.

Forney, M. N., appointment of, 58; remarks of, 13, 18, 24, 27, 37, 38, 39, 40, 41, 48, 49, 50, 55, 57, 58, 59, 61, 64, 66, 70, 71, 73, 95, 106, 156, 157, 162, 163, 164, 172, 176, 178, 179.

Forsyth, William, remarks of, 23, 46, 57, 66, 118, 120, 125, 152, 168, 169, 170.

Franklin Institute system of screw-threads, 220-224.

Freight cars, report on maximum outside dimensions of, 163.

Frogs, 63, 113.

Frog-point, 114, 115.

Frog, wing of, 114.

Frost, effect of, on wheels, 68.

Furnishing material, 150.

G

Garey, Leander, remarks by, 13, 15, 17, 23, 26, 43, 54, 56, 65, 122, 175, 177, 178.

Gauge, for defective wheels, 97, 110, 111; of the engineer, 170; limit for wheels, 118, 119, 120; rail, 115; of wheels, 97; of wheels, engraving of, 114; wheels out of, 99, 101, 113, 119, 142.

Gauges, standard wheel and axle, 218; for track, 60; for wheels, 118.

Gifford coupler, 77, 177; engraving of, 85.

Gondola car, prices for, 103, 146, 147, 148.

Goodwin, H. Stanley, motion of, 29; remarks of, 65, 154.
Governor, automatic, 167.
Grain line elevator car, 154.
Grieves, E. W., elected Vice-President, 178; remarks of, 49, 53, 55, 57, 66, 67, 78, 128, 181.
Guard-rails, 60, 113, 114.

H

Hammond, J. S., remarks of, 75.
Handles, standard for, 234.
Hanger pins, 53.
Hartford & New Haven Railroad, 41.
Hatch, W. B., remarks of, 124.
Heading of Rules of Interchange, 125.
Hegewisch, Mr., on Committee, 24.
Height of dead-blocks, 30–35, 36; of draw-bar, 28, 35, 36, 40; of Miller draw-bar, letter ballot on, 181–184; of draw-bars for passenger cars, report on, 171, 172; of draw-bars on Pennsylvania, Erie and Baltimore & Ohio Railroads, 38; of draw-bars, standard of, 225.
Hien coupler, 77; engraving of, 85.
Hilliard coupler, engraving of, 86.
Hill's coupler, engraving of, 86.
Hitchcock coupler, engraving of, 86.
Hitchcock, Robert, remarks of, 40, 41, 42, 43, 48, 49, 50, 121, 163.
Hodge, John, appointment of, 58; remarks of, 19, 23.
Hole in dead-block, 49.
Hook-couplers, 77, 171, 177.
Hoosac Tunnel route, 70.
Hopper-bottom cars, price for, 147, 148.
Horizontal plane, 77.
Hot journals, 161.
Hub cracked, 101, 141.
Hurd, Mr., remarks of, 124.

I

Illinois Central truck, 53.
Importunities of inventors, 8.
Interchange of freight cars, 4; points, 96, 107, 122.
Interchangeability, 20.
Inspectors, 108, 112, 116, 119; of cars, 77; limit gauge, 118, 119.
Interchange of cars, 79.
Intermediate sills, 117; defective, 97.
Inventors of couplers, 5, 76; importunities of, 8.
Iron, cast and malleable, 151.

J

Janney coupler, 77, 177; engraving of, 87; type of coupler, 175.
Joo coupler, engraving of, 87.
Journal-bearing, 219.
Journal-bearings, price of, 151.
Journal-box, standard, 219.
Journal, limit of size of, 160; for 60,000 lbs. car, 160; small, 101, 142.
Journals, 159; broken, 112; cut, 111; of less diameter, etc., 111; size of, 111, 112, 160, 161.

K

Keeler, Sandford, remarks of, 95, 120, 126, 1 177.
Kelley coupler, engraving of, 87.
Kirby, John, elected Treasurer, 178; on com 24; remarks of, 113, 120, 121, 123, 126, 1 140, 155, 162, 165, 168, 169, 170.

L

Labor, price of, 151.
Ladder and handles, standard for, 234.
Ladders, defective, 97; in bad order, 117.
Lake Shore & Mich. Southern Railway, 165.
Lancaster coupler, engraving of, 88.
Leaky roofs, 97, 117.
Leased cars, 104, 152.
Lehigh Valley Railroad, 65, 70, 154, 177.
Lentz, John I., motion by, 185; remarks by, 50, 52, 58, 59, 70, 107, 112, 114, 118, 125, 1 147, 148, 149, 155, 170, 177.
Le Roux & Van Aarle coupler, engraving of,
Letter-ballot, 172; motion to submit Christie shoe to, 72; motion to submit height of draw-bar to, 172; motion to refer sta tread and flange to, 68; on tread and flan
Lettering, of cars, 151; and numbering of car and numbering of cars, standard for, 235.
Levers, brake, 167, 168; dead, 166.
Leverage, 167; of brakes, 167.
Limit, between flanges, 113; gauge, for wheel 119, 120; gauges for round iron, 224, 225.
Limits for size of journals, 111, 112.
Lindsay, H. K., communication from, 139.
Line cars, 121; storing of, 236, 237.
Link, standard, 76.
List, of officers and members, 265–271; of ra companies which have adopted the ru interchange, 250–252; of subjects and co tees, 263, 264.
Locks, 118; effected by gravity, 77; effect spring, 77; at owner's risk, 98.
Locomotive, 168.
Loose, coupling bar couplers, 77; link couple wheels, 97, 99, 101, 113, 120, 126, 142.
Lyons, Henry D., remarks by, 153.

M

McCree coupler, engraving of, 89.
McCuen, J. G., death of, 5; committee to pr memoir of, 58; memoir of, 262.
McIlwain, J. D., communication from, 18; re of, 52, 67, 68, 73, 111, 155, 156, 170, 176, 177,
McKeen coupler, 77, 80; engraving of, 89.
McWood, William, called to chair, 126; el Vice-President, 178.
MacKenna, Robert, remarks by, 41, 43, 44, 47,
MacKenzie, John, remarks by, 13, 16, 23, 67, 6 112, 116, 118, 120, 128, 133, 135, 138, 141, 14 147, 149, 150, 160, 161.
Maintenance of way men, 64, 68.
Majority should decide standards, 71.
Maker of wheels, 135, 136.

, price of, 151.
, remarks by, 13, 59, 63, 64, 66, 68, 70, 112, 114, 116, 124, 140, 142, 149, 150, 153, 31, 162, 167, 169, 179, 172, 173, 174, 175,

e to rules, 159.
standard for, 235.
, 77, 80; engraving of, 88.
, communication from, 70.
ilders' Association, organization, 4; 59.
nics' Association, 64, 70, 168, 169.
nishing of, 104, 150; prices of, 151; of cars, 99, 103; using, 145.
wheels, 102; of wheels, 142.
utside dimensions of freight-cars, 163; subject continued, 163.
ead coupler, engraving of, 89.
of, 266-271.
of the Association, 6; total, 7.
espatch Company, 120, 121, 122, 126.
espatch Transportation Company's 124.
ral car, 52.
of, 52; State of, 6.
ar, letter-ballot on, 181-184; draw-bar, height of, 171, 172; hook, 167; type , 172, 173, 175.
, device to prevent slipping of wheels, iate XIV.; remarks by, 23, 44, 52, 57, 2, 179.
178, 179.
tion of, 3.
eetings of the Executive Committee,

els, 63.
r, engraving of, 90.
ccept Auditing Committee's report, ccept report on brake tests, 26; to port on dead-blocks, 85; to accept end platform for freight cars, 55; to ort on slipping of wheels, 167; to ac- rt on trap-doors and discharge com- ; to accept Treasurer's report, 187; to endment to Constitution with refer- appointment of committees, 16; to e of rules as a whole, 162; to adopt ill, 135; to adopt minutes, 3; to adopt standard truck, 23; to adopt section *b* , 109; to adopt Rule 11, 122; to adopt as printed, 123; to adopt Rule 13, as to adopt Rule 14, 142; to adopt Rule o adopt Rule 27, 154; to adopt Rule o adopt recommendation of committee rence to space between ends of cars, journ to three o'clock, 40; to amend 137, 138; to amend Rule 3, 113, 114, 160, 161; to amend section *a* of Rule amend section *c* of Rule 3, 109; to ction I of Rule 3, 111, 112; to amend 18; to amend Rule 9, 118, 120; to amend Rule 12, 127, 129; to amend Rule 29, 155, 156, 157; to amend Rule 30, 158; to amend sections 3 and 4, of Article VIII. of Constitution, 17; to amend form of wheel-defect gauge, 111; amendment to classify trucks, 149; amendment to price of trucks, 149; to appoint committees on car coupler tests, 187; to approve of form of charging wheels, 127; to change classification of flat cars, 149; to introduce new classification of hopper-bottom cars, 148; to enlarge scope of committee on end platforms, etc., 55, 57; to increase Committee on British and Continental practice, 27; to consider recommendations of committee on dead-blocks, singly, 40; to continue committee on British and Continental practice, 25; to continue committee on safety to train men, 24; to continue the subject of maximum outside dimensions of freight cars, 163; amendment to same, 164; to continue subject of slipping wheels and refer it to a new committee, 170; to continue the subject of standard draw-gear for non-automatic couplers and appoint new committee, 164; that secretary declare vote, 13; to discharge committee on codification of rules of interchange, 172; to dispense with vote on cars, 105; to fix price of doors, 151; that face of draw-head should not extend beyond dead-blocks, 51; amendment, 51; inviting Mr. Barnett to take part in discussion, 64; to lay amendment to constitution on table, 18; to lay over amendment to constitution, 163; to lay form of bill on table, 135; to lay Rule 12 on table, 133; to lay Rule 27 on table, 152; to meet in St. Paul or Minneapolis, 178; to postpone amendment to constitution, 188; to postpone discussion on dead-blocks, 41; to postpone discussion on report on trucks, 23; to receive report on code of rules, 105; to receive report on couplers and continue committee, 95; to receive report and adopt recommendation of committee on standard height of draw-bar, 172; amendment, 172; to reconsider amendment to constitution, 17; to reconsider Rule 3, 159, 160; to reconsider section *k* of Rule 3, 162; to reconsider Rule 11, 124; to reconsider vote on amendment to Rule 12, 128; to reconsider vote on form of bill, 135, 136; to refer communication from H. K. Lindsay to committee on brakes, 139; to refer Cowell coupler to the Detroit, Lansing & Northern Railroad for trial, 177; to refer standard tread and flange to letter-ballot, 68; to refer the matter of subjects for discussion at next meeting to Executive Committee, 177; relating to form of tread and flange, 62; amendments, 63, 66, 67; relating to price of box cars, 149; relating to price of coal cars, 149; relating to price of gondola cars, 149; relating to price of trucks, 149, 150; relating to size of axle for 60,000 lbs. car, 160; relating to value of cars, 146, 147; requesting master mechanics to provide a safety-

valve for air-receivers, 168; that revision of rules of interchange be special order, etc., 18; that Mr. Rhodes should furnish drawing, 116; that Rule 16 stand as read, 143; to go through all the rules *seriatim*, 162; to strike out part of Rule 15, 142; to submit brake-shoes to letter-ballot, 71; to submit Christie brake-shoe to letter-ballot, 72; to submit dimensions of beams for dead-blocks to letter-ballot, 49; to submit dimensions of dead-blocks to letter-ballot, 48; to submit height of dead-blocks to letter-ballot, 47; to lay on table, 48; to submit recommendation of Committee on Dead-blocks, with reference to height of draw-bars, to letter-ballot, 40; vote on, 47: motion to lay on table, 47; to submit standard truck to letter-ballot, 54; to submit tread and flange to letter-ballot, 59; to substitute form on black-board for printed form of bills for wheels and axles, 143; to substitute for amendment to Rule 11, 120, 123; to substitute for Rule 12, 130; to suspend Rule 11, 124.

Murphy coupler, engraving of, 90

Murray, S. W., appointment of, 58.

N

National Car Masters' Association, 4.

National Despatch Line, 121.

New England Railroad Club, 59, 60, 61.

New England Railroads, 41.

New York, Central & Hudson River Railroad, 45, 70, 121, 122, 123, 124, 126, 152, 153, 154.

New York Central & Hudson River Railroad, height of draw-bars, 38.

New York, Lake Erie & Western Railroad, 75.

Nominating committee, appointment of, 13.

Nomination of Auditing Committee, 13; of officers, 95.

Non-automatic couplers, report and committee on, 164.

Northern Central Railway, 166.

Notice to secretary, 151.

Notification of withdrawal, 154.

Number of wheels, 136.

Numbering of cars, 151.

Numbering cars, standard for, 235, 236.

Numbering and lettering of cars, 104.

Nuts and bolts, standard, 223.

Nuts, price of, 151; on brass-rods, 33.

O

Oak, price of, 151.

Officers, election of, 177, 178; list of, 265.

Oiling, of cars, 96; foreign cars, 107.

Ontario, 68.

Organization of the Master-Car Builders' Association, 4.

Original plan of construction, 145.

Out of gauge, 101, 142.

Outside sills, 117; defective, 97.

Overloading, 118.

P

Packard, L., elected Executive member, 178.

Packing, of cars, 96; foreign cars, 107.

Paint brush, 150.

Paper manufactory, 154.

Patents on brake-shoes, 71.

Patterns, 5.

Pawl, 233.

Payne coupler, engraving of, 91.

Pedestal, standard, 219.

Pennsylvania Railroad, 41, 44, 71; height of bar, 38; standard truck, 53.

Pennsylvania track, 114.

Perry coupler, 77; engraving of, 91.

Phosphor-bronze bearings, 151.

Philadelphia & Reading Railroad, 153.

Pin supporters, 76.

Pine, price of, 151.

Pittsburgh, Cincinnati & St. Louis Railroad,

Place of meeting, report on, 178.

Place for next meeting, appointment of com on, 13.

Plans for floor framing, 56.

Plate cracked, 101, 141.

Platforms, end for freight cars, report on, 55 cussion on, 55–57.

Postponement of discussion of trucks, 24.

Precious metal, 63.

President, address of, 4–6; election of, 178; of, 178.

Pressure of air, in brakes, 167; on brakes, 168

Prices of materials, 151; for new cars, 146–150 trucks, 146–150; of wheels, 127–128; for and axles, 126.

Prick punching, 102, 142.

Private cars, 99; siding, 153, 154; tracks, 10 153.

Protection of trainmen from accident, 232–234

Q

Questions for discussion, in order, 23.

R

Rail, 63, 64.

Rail-head, 64; form of, 59; standard, 68.

Rail-points, 68.

Railroad commission, invitation to circular re to trial of car-couplers, 185–187.

Railroad Commissions, 38, 46, 76.

Railroad companies, which have adopted the of interchange, 250–252.

Railroad Gazette, 77, 139.

Railroad papers, 157.

Rails, wear of, 66.

Ratchet wheel, 233.

Rebuilding of cars, 102, 103.

Receipts and expenses, 8–12.

Receiving and delivering cars, 107.

Refrigerator cars, 103, 121, 146.

Refusal of cars, 96.

Rejection of Code of Rules, 154.

Removal of wheels, cause of, 141.

9; of cars, 150, 151; of couplers, gn cars, 101; of parts of cars, 99.
ettling for foreign cars, 101–103, 142.
ting Committee, 136, 184; on auto- s, 25; on British and Continental ; on car couplers, 74–94; on dead- en end platforms, for freight cars, ntive Committee on Rules of Inter- 165; of Executive Committee, dis- 172–177; on maximum outside of freight cars, 163; of committee ce of meeting, 178; on nomination 95; on safety to trainmen, 24; of ; on slipping of wheels, 164, 167; of wheels, discussion of, 167–170; l truck, 19–23; on standard dead- ussion of, 35–52; on standards and for safety of trainmen, 24; on stand- ar for non-automatic couplers, 164; height of draw-bars for passenger 2; on subjects, 177; on trap-doors er cars, 27; of treasurer, 12, 137; of alled for, 57.
, 7.
members, cars represented by, 106,

members, vote of, 106, 158.
4, 150, 151.
, 169.
Executive Committee, with reference oes, 70; referring the subject of ouplers to the Executive Committee, ks to Erie Railroad and F. M. Wilder,

ociation, 7.
ode of Rules, 158; of the Code of terchange, 95–103; of rules, 156; of al order of, 18.
, remarks by, 25, 45, 61, 72, 107, 109, , 117, 118, 119, 120, 127, 129, 130, 131, , 148, 151, 157, 174.
, 172.
, 157.
109, 119; of wheel chipped, 96.

59.
ilroad, 176.

59.
ky, 97, 117; lost, 98.
ion of, 107; Rule 2, 107, 152, 153; of, 107, 108; Rule 3, 108, 152, 159; of, 108–117; Rule 4, 117; Rule 5, 117; of, 117, 118; Rule 6, 118; Rule 7, 118; ; Rule 9, 118; discussion of, 118–120; 0; Rule 11, 120; discussion on, 120– tute for, 120; vote on, 125; Rule 12, ssion on, 127–133; Rule 13, 133; re- on of, 143; Rule 14, 141; Rule 15, 16, 142; discussion of, 142–145; Rule ule 18, 145; Rule 19, 145; Rule 20, 145; Rule 21, 145; Rule 22, 146; discussion of, 146–150; Rule 23, 150; Rule 24, 150; Rule 25, 151; Rule 26, 152; Rule 27, 152; discussion of, 152–154; Rule 28, 154; Rule 29, 154; Rule 30, 158, 162; Rule 31, 159.

Rules, code of, changes in, 154; code of, governing the condition of and repairs to freight cars for the interchange of traffic, 239–249; code of, revision of, 158, 159; code of, to take effect, 159; revision of 156, 158; of interchange, 5; of interchange, acceptance or rejection of, 105; of interchange, amendment of, 105; of interchange, any company may become a party to, 105; of interchange, consideration of, 18; of interchange, discussion of, 107–163, 179; of interchange, heading of, 125; of interchange, to take effect, 105; of interchange, report on, 96–105; of interchange, revision of, 95–168.

Running-boards, defective, 97; in bad order, 117; standard for, 233.

Russell's eccentric coupler, engraving of, 91.

S

Safety of trainmen, 37, 38; report on, 24.

Safety-valve for brakes, 167, 168.

St. Paul, 178, 179.

Saratoga, 178; meeting, 39.

Schlacks, H., remarks by, 127.

Scott, W. A., remarks by, 113, 116, 119, 162, 167.

Screw-threads, standard, 220–224.

Screws, over or under size, 224.

Second day's proceedings, 57.

Second-hand wheels, 102, 142.

Secretary of Association, 104, 154; instructed to print marginal notes, 160; lower priced, 7; report of, 6; account, 8–12; salary, 7.

Section of wheel, 59; of wheel-treads, 62.

Seller's system of screw threads, 220–224.

Sharp flanges, 63, 110; data concerning, 65; determination of, 97.

Shelled-out wheels, 96, 101, 109, 111, 141.

Shimming of wheels, 102, 142.

Side bearings, 20; height of, 21.

Side doors, prices of, 151.

Sills, 145; intermediate or outside defective, 97; spliced, 117; splicing of, 102.

Simpson's coupler, engraving of, 92.

Skidded wheels, 170.

Slid flat, 101, 141.

Slid wheels, 108, 170; report on, 164–167; report on, discussion of, 167–170.

Sliding of wheels, 99, 118, 119, 120; report on, 164–167; report on, discussion of, 167–170.

Slipping of wheels, device to prevent, 164–167, and Plate XIV., discussion of, 167–170; report on, 164–167; report on, discussion of, 167–170.

Smillie coupler, engraving of, 92.

Smith, C. A., remarks by, 71, 163.

Snow, W. B., remarks by, 24, 46, 47, 50, 51, 52, 53, 112, 125, 127, 128, 142, 143, 147, 152, 169.

Snyder, H. F., death of, 6; committee to prepare memoir of, 58.
Soule, Richard H., remarks by, 24, 26, 108, 109, 110, 119, 127, 128, 135, 136, 138, 139, 148, 158, 160, 161, 166.
Southgate, Mr., 178.
Special cars, 146.
Splice, 145; for sills, engraving of, 102.
Splicing of sills, 102.
Springfield, Mass., 4.
Spring-hangers, 21, 24.
Standard attachment of draw-bars, 226; axle for 60,000-lb. car, 128, 160; bolts and nuts, 223; brake-shoe, 71, 219; capacity of draw-springs, 227; check-chains, 234; dead-blocks, 28-35, 227-231; dead-blocks, discussion on, 35-52; dimensions of draw-bars, 227; dimensions, forms of construction, etc., 216-238; distance between flanges of wheels, 218; draw-gear, 225-227; draw-gear for non-automatic couplers, report on, 164; for end platforms, 56; for fastening brake ratchet, wheel and pawl, 233; forms, 4; height of draw-bars, 28-35, 36, 225; height of draw-bars for passenger cars, report on, 171, 172; height of draw-bar on Pennsylvania, Erie and Baltimore & Ohio Railroads, 38; journal-bearing, 219; journal-box, 219; for ladder and handles, 234; for lettering and numbering cars, 235, 236; limit gauges for round iron, 224, 225; link, 76; for marking cars, 235; parts, new, 142; pedestal, 219; position of brake-shafts, 232; rail-head, 68; for running-boards, 233; screw-threads, 220; steps, 234; tread and flange, 58; tread and flange, discussion on, 58-68; tread and flange, engraving of, 69; tread and flange, motion to submit to letter-ballot, 59; amendments to, 63, 66, 67; truck, 4; truck, report on, 19-23; wheel and axle gauges, 218; wheel tread and flange, 216, 217.
Standards for protection of trainmen from accidents, 232-234.
Standards, letter-ballots on, 181-184.
Stamford coupler, engraving of, 92.
Steel, cast, price of, 151.
Steel-tired wheels, 62.
Steps, defective, 97; in bad order, 117; standard, 234.
Stock car, prices for, 103, 146.
Stock car doors, prices for, 151.
Storing of line cars, 236, 237.
Storms, 98, 117.
Sub-committee, 155; on rules of interchange, 105.
Subjects, appointment of committee on, 13; committee on, 139; for discussion, 139; list of, and committees, 263, 264; report of committee on, 177; reported, 178.
Suspension Bridge, 70.
Suspension of rules, 13.
Sutherland, T., remarks by, 46, 51.
System of making standard axles uniform, 178.

T

Tests of brakes, 5, 25; of couplers, 75, 76.
Thanks, resolution of, 18.
Thin flanges, 110; determination of, 97.
Third day's proceedings, 126.
Thousand Islands, 178.
Throat of wheel, 59, 63, 64, 65, 110.
Thurmond coupler, 77, 80; engraving of, 93.
Titus, H. D., nomination of, 113.
Titus & Bessinger coupler, 77; engraving of,
Townsend, J., remarks by, 150.
Track-gauges, 60.
Track, private, 104, 152, 153.
Trainham, W. H., remarks by, 126.
Trainmen, protection from accidents, 232-234
ty of, 38.
Train-pipes, 169.
Transoms, 19.
Trap-doors for passenger cars, report on, 27.
Tread of wheel, 60; chipped, 118; letter-ba
181-184.
Tread, width of, 96.
Tread and flange, engraving of, 69; motion
to form of, 62; amendments, 63, 66, 6
tion to submit to letter-ballot, 59; stands
standard, discussion on, 58-68; and fla
wheel, standard, 216, 217.
Treads, chipped, 99, 109, 110, 118, 120; chipp
termination of, 97; defective, 101, 1
wheels, defective, 96.
Treasurer, election of, 178; report of, called
Treasurer's report, 12, 137.
Trial of car-couplers, circular relating to, 185
Trial of couplers, 5, 75.
Truck bolts, 53.
Truck, with capacity of 60,000 lbs., 54.
Truck-irons, 53.
Truck-levers, 168.
Truck, out of tram, 63; standard, 5; standa
port on, 19-23.
Trucks, classification of, 150; cost of, 53;
of, 98, 117; destruction of, 102, 145; pric
103, 146-150; return of, 103, 150; sample,

U

Unfinished business, 13, 18.
Uniformity, 4, 20, 71.
Uniformity in height of draw-bars, 31, 32-37.
Union coupler, engraving of, 94.
Union Line, 123.
Union Tank Line, 71, 121.
United States coupler, engraving of, 93.
United States Rolling Stock Co., 123.

V

Valve for brakes, 167-169.
Verbryck, B. K., elected President, 178; r
by, 45, 125, 128, 130, 151.
Vermont Central Railroad, 41.
Vertical-hook coupler, 174.
Vertical plane, 77.

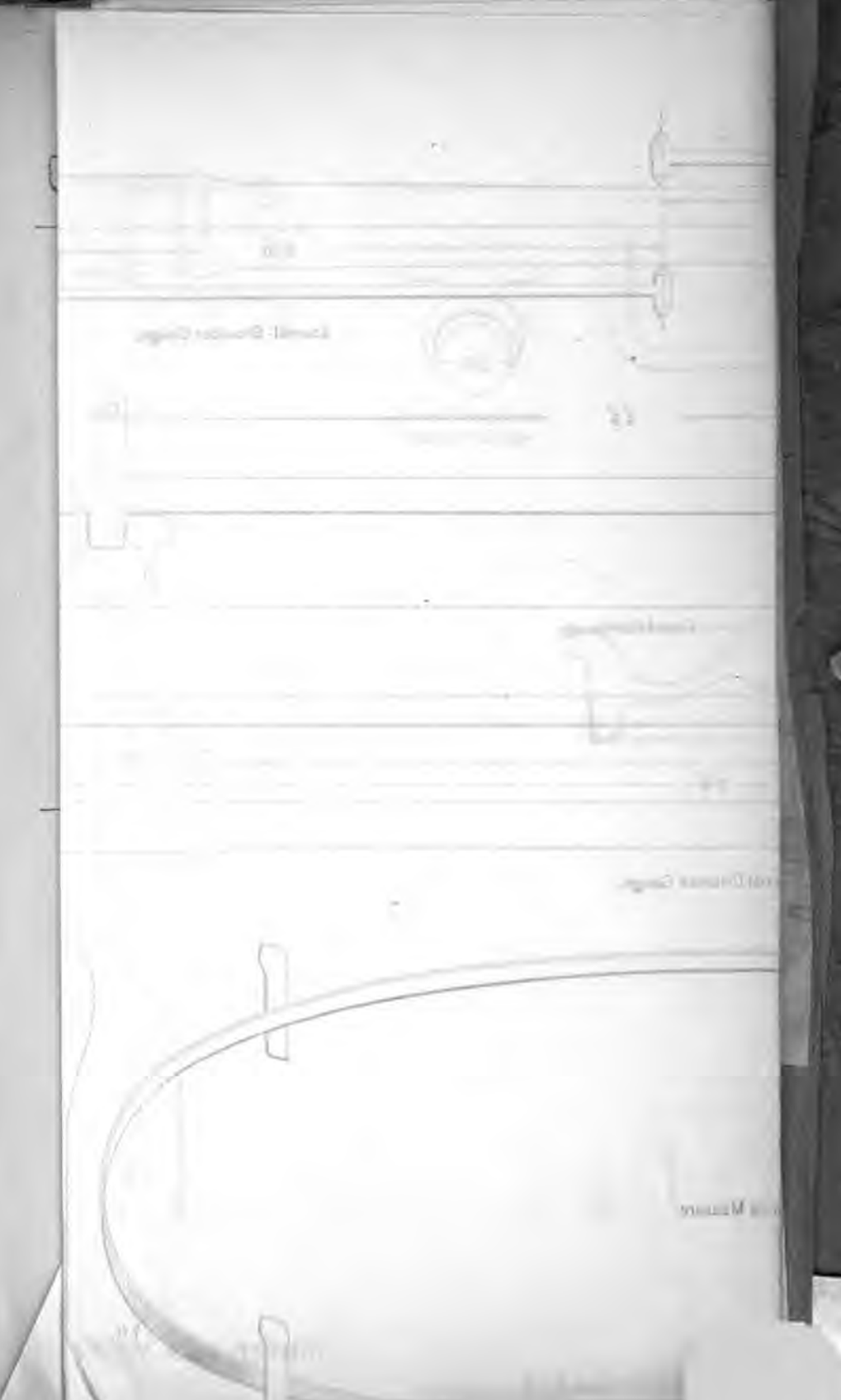
e-shocs, 73.
alled for, 120, 124, 126; on Rule 11,
rs, motion to dispense with, 105; of
ad on rules, 125; final on rules,
es of interchange, 106.
in Association, 7; to which members
, 182; number to which members are
8.

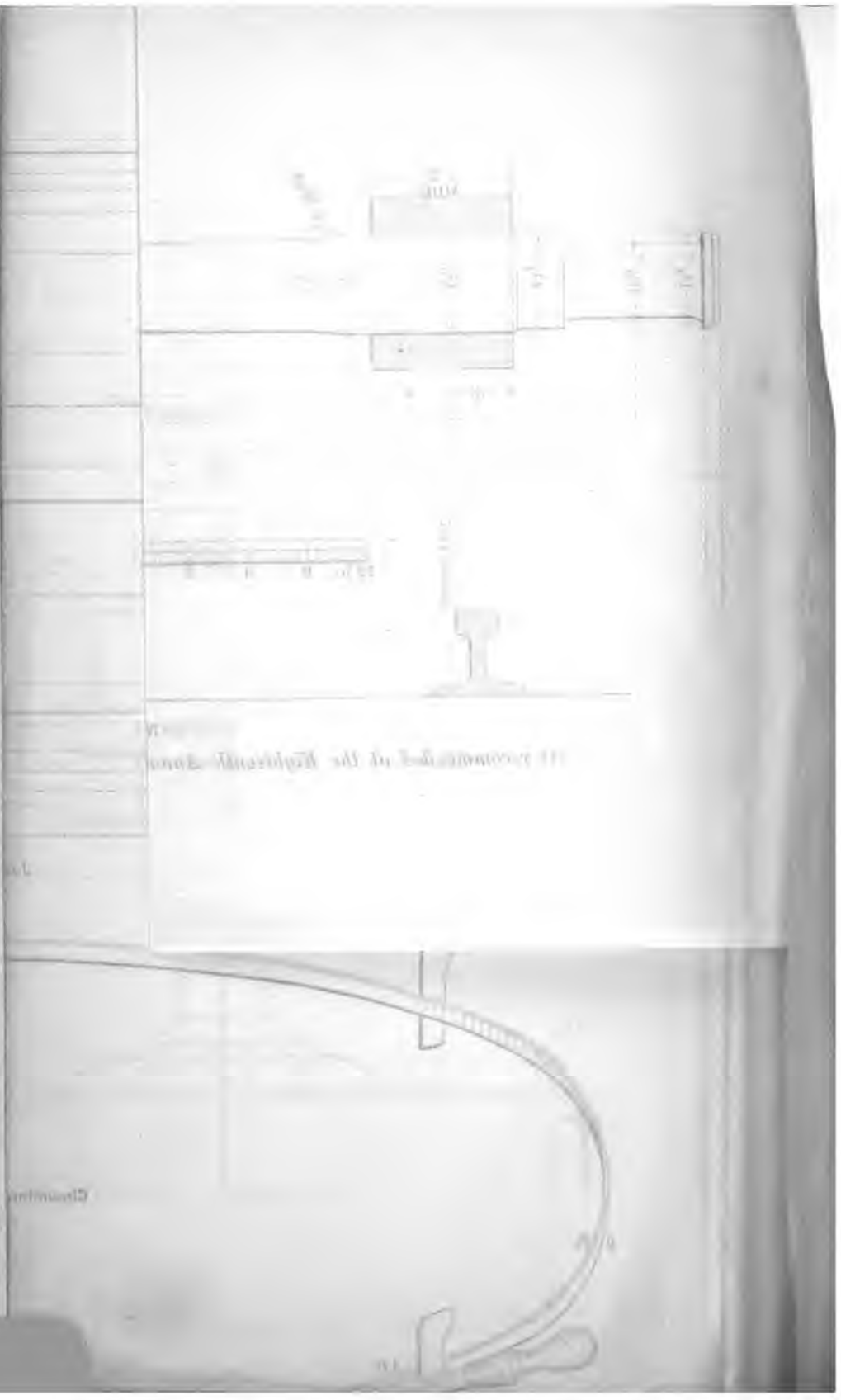
W

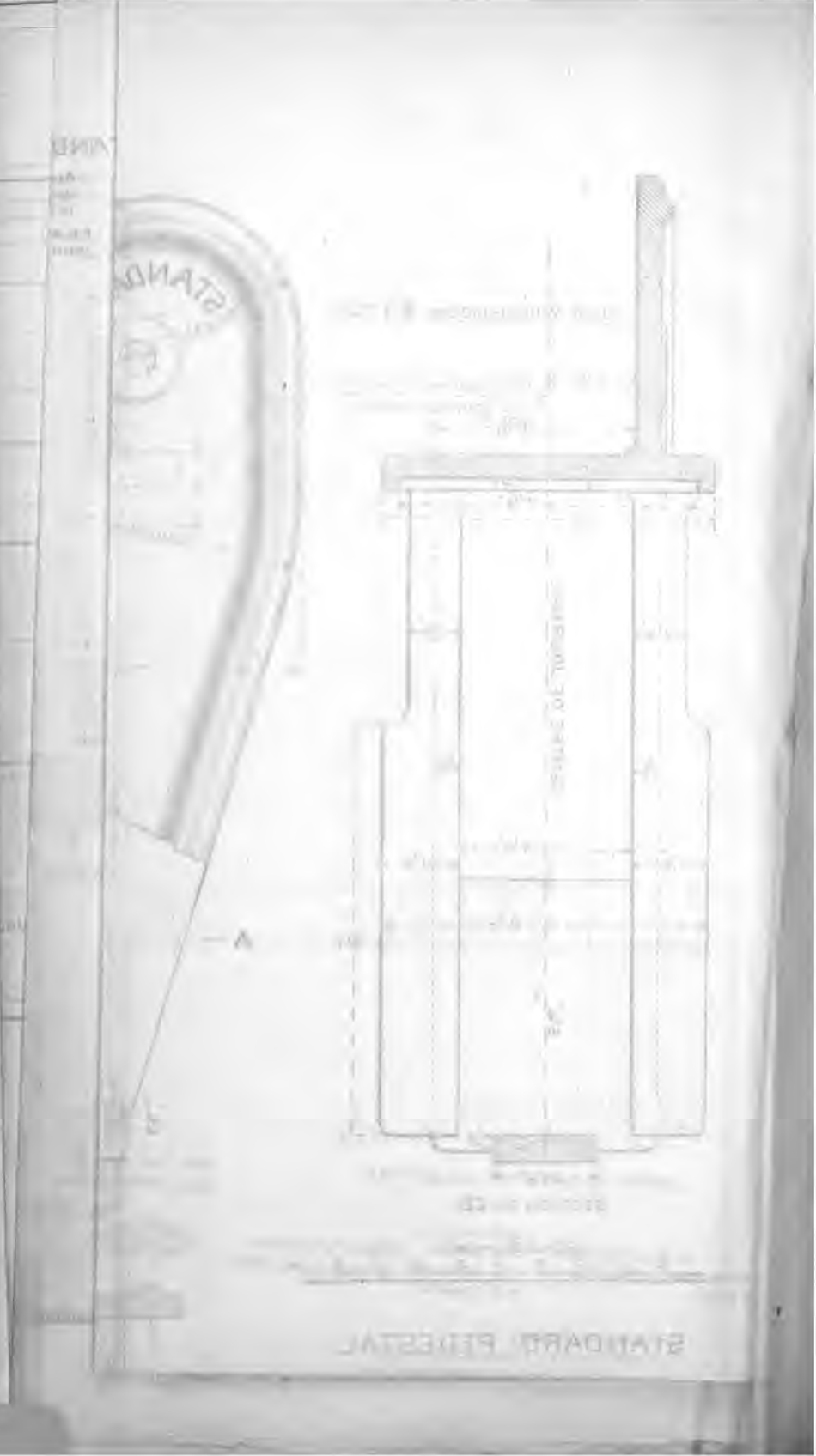
., meeting of representation of, 70.
remarks by, 145.
ted Executive member, 178; motion
marks by, 13, 14, 15, 18, 19, 40, 52, 54,
6, 107, 109, 111, 112, 124, 136, 141, 143,
1, 157, 158, 163, 166.
C., remarks by, 163.
N. Y., 4.
ailway, 140.
Company, 167; people, 167; system,

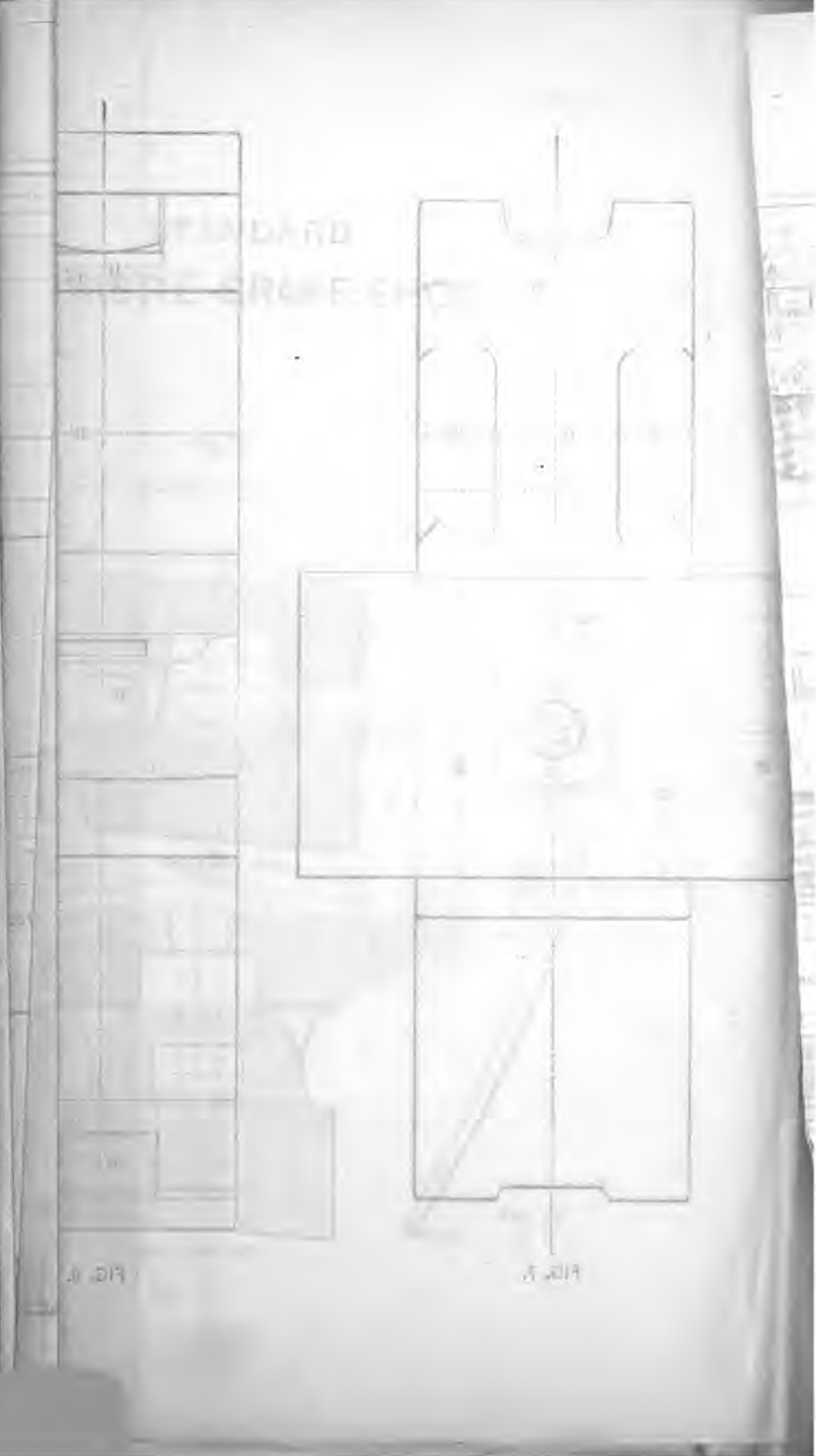
, 136; and axle gauges, standard, 218;
work, bills for, 133, 134, 135; defect
110, 111; defective, 129; fitted, 138;
101, 113, 142; record, 135; seats, 102,
of axles, 142; tread, 59; tread and
dard, 216, 217.
xles removed and applied, 136; to
., 98; renewed, 126; substitution of,
o replace, etc., 118, 119.

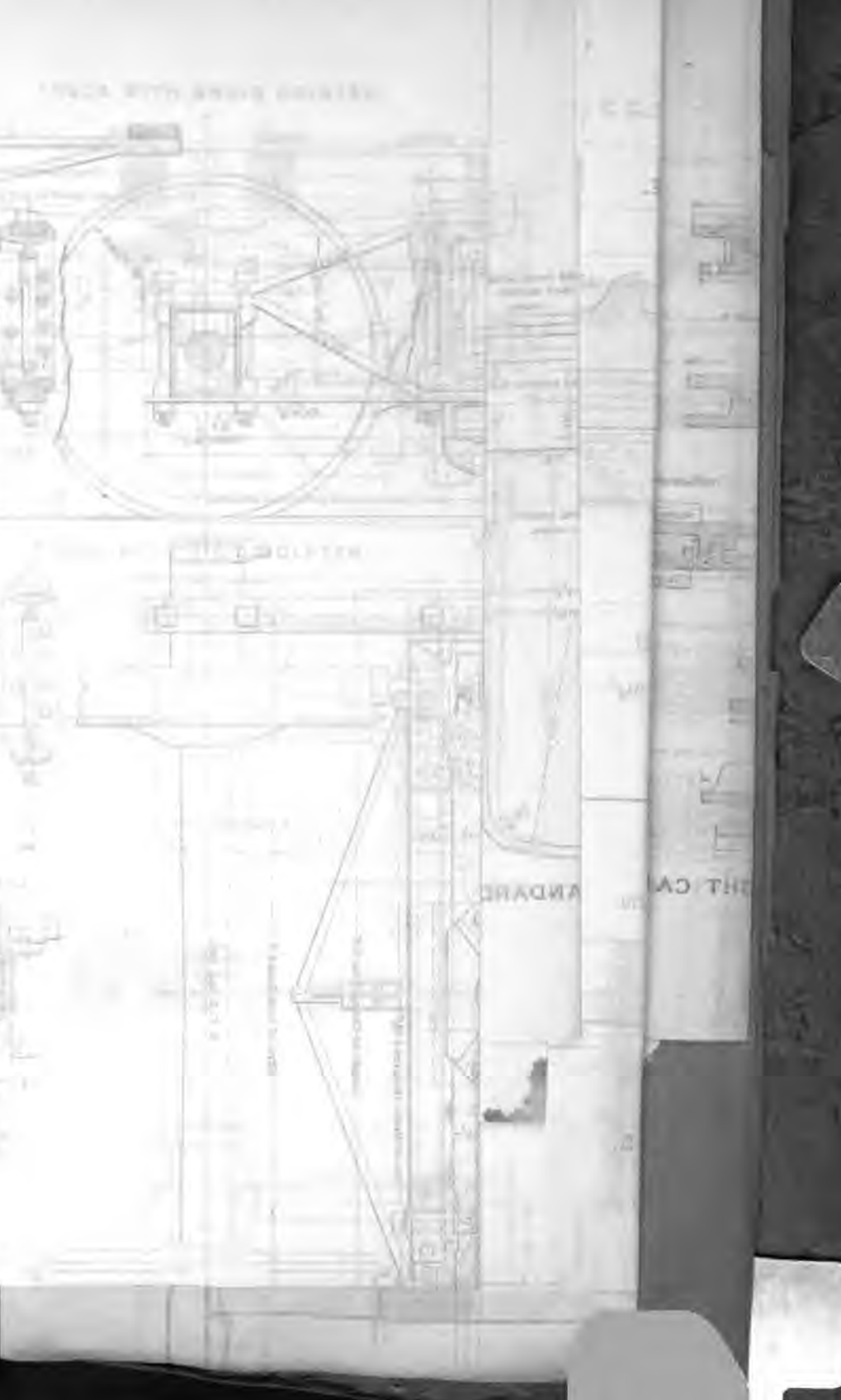
Wheels on same axle, 142.
Wheels, bills for, 89, 126; boring of, 102, 219; broken in pieces, 101, 141; causes of removal of, 141; chipped, 96, 109; cracked or broken, 97; date of application of, 102; defects of, 96, 108; defective, 99; with defective treads, 96, 101; engraving of gauge of, 114; with flanges chipped, 96; flat, 98, 118, 119; loose, 90, 120; loose and defective, 126; maker of, 135, 136; mismated, 33; must be bored to fit axles, 142; must be of same diameter, 102; must be marked, 142; new, 102; new, mating of, 142; number of, 136; out of gauge, 97, 99, 101, 113, 114, 119, 120, 142; price of, 126, 127; prices of, 127, 128; removed, 129, 135; second-hand, 102, 142; shelled out, 96, 109, 141; skidded, 170; sliding of, 132; slipping of, devices to prevent, 164–167, and plate XIV., and discussion of, 167–170; slipping of, report on, 164–167; 31-inch, 128; wear of, 64; with treads defective, 141; worn out, 118.
Whitman coupler, engraving of, 94.
Wilder, F. M., thanks to, 18; remarks by, 65.
Williams' coupler, engraving of, 94.
Wing of Frog, 113, 114, 115.
Wing-rails, 68.
Wood, Joseph, remarks by, 16, 40, 41, 152.
Worn flange, 96, 101, 109, 116, 141.
Worn flat, 101, 141.
Worn out wheels, 111, 118.
Worn wheels, 108.

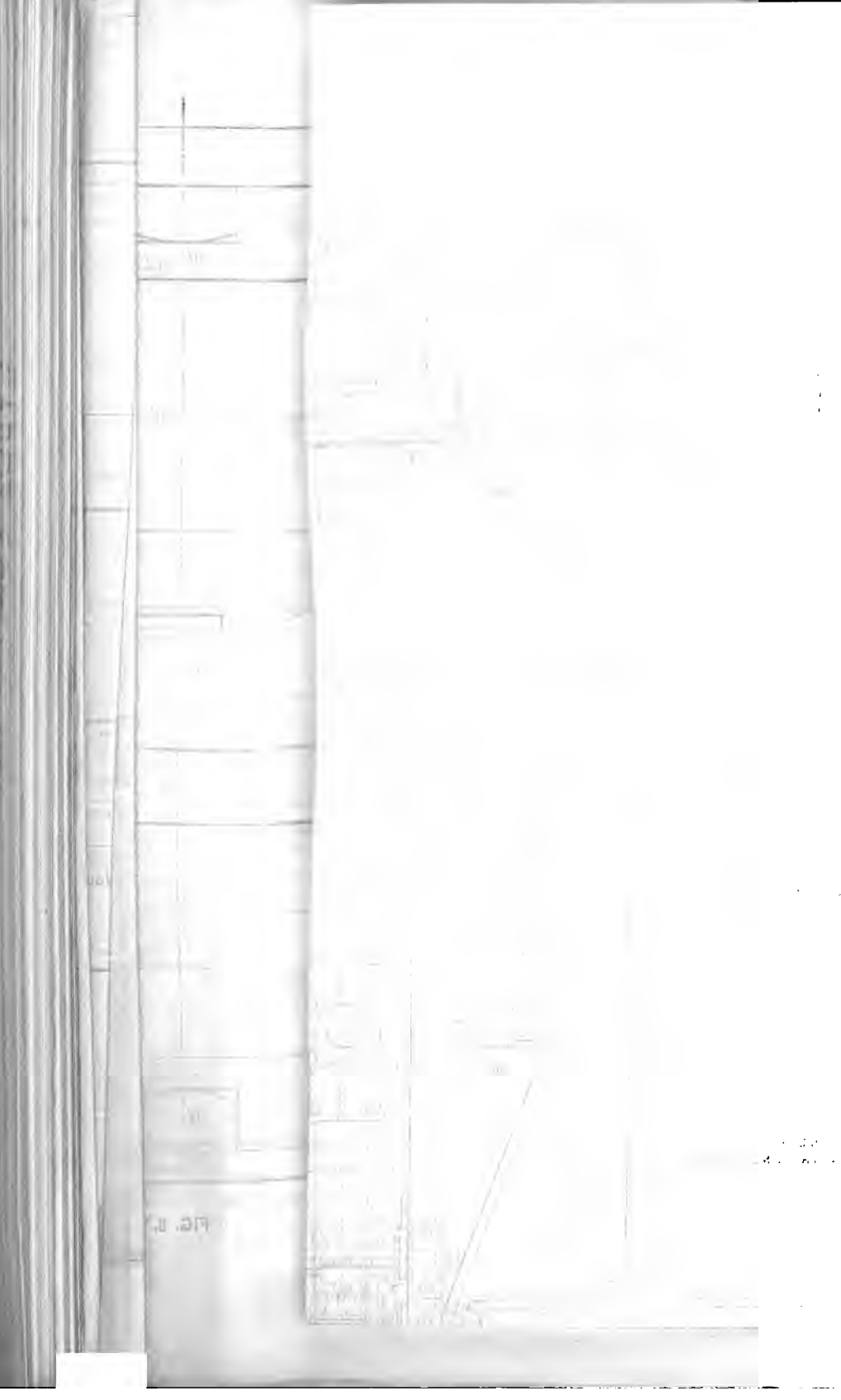


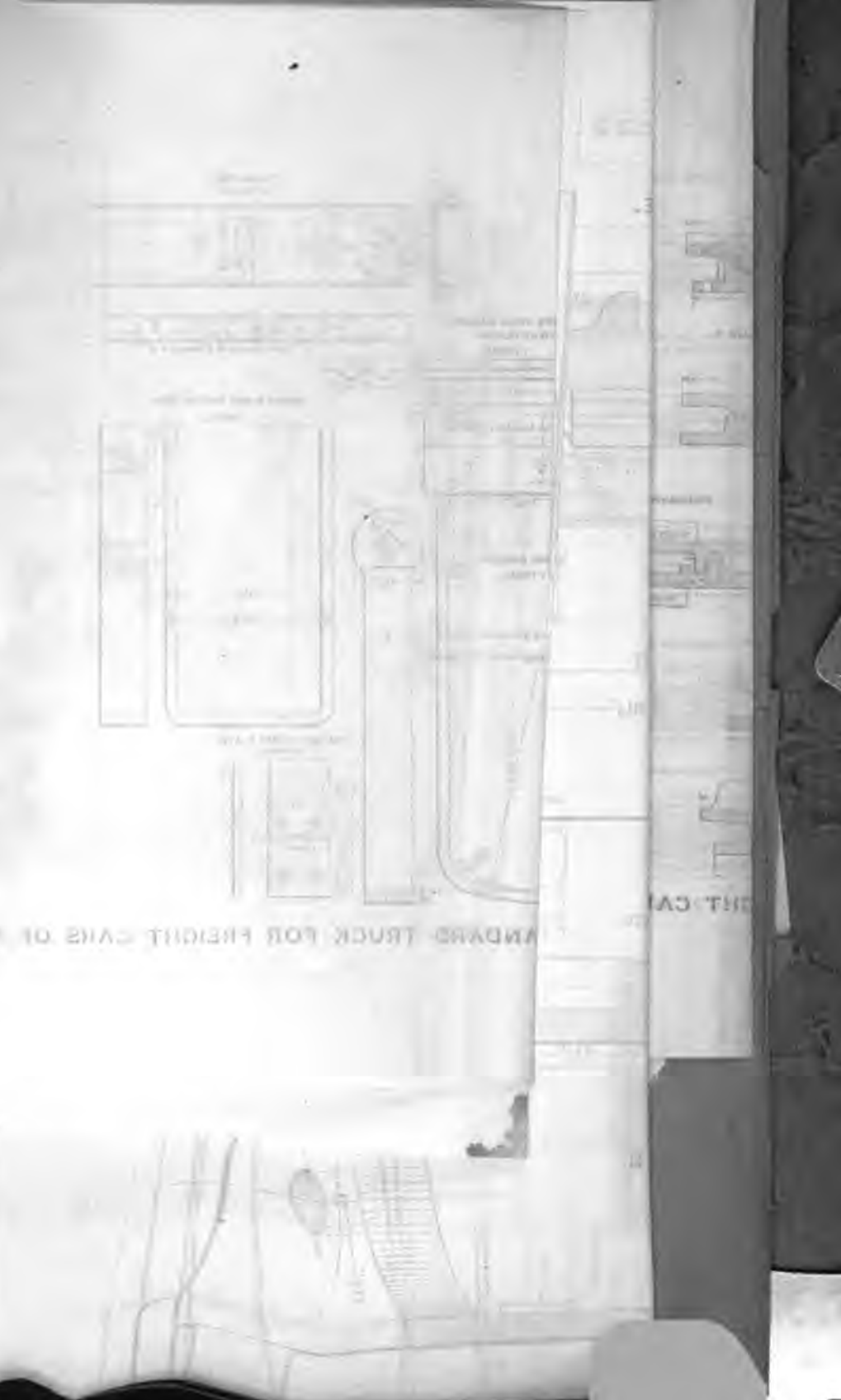


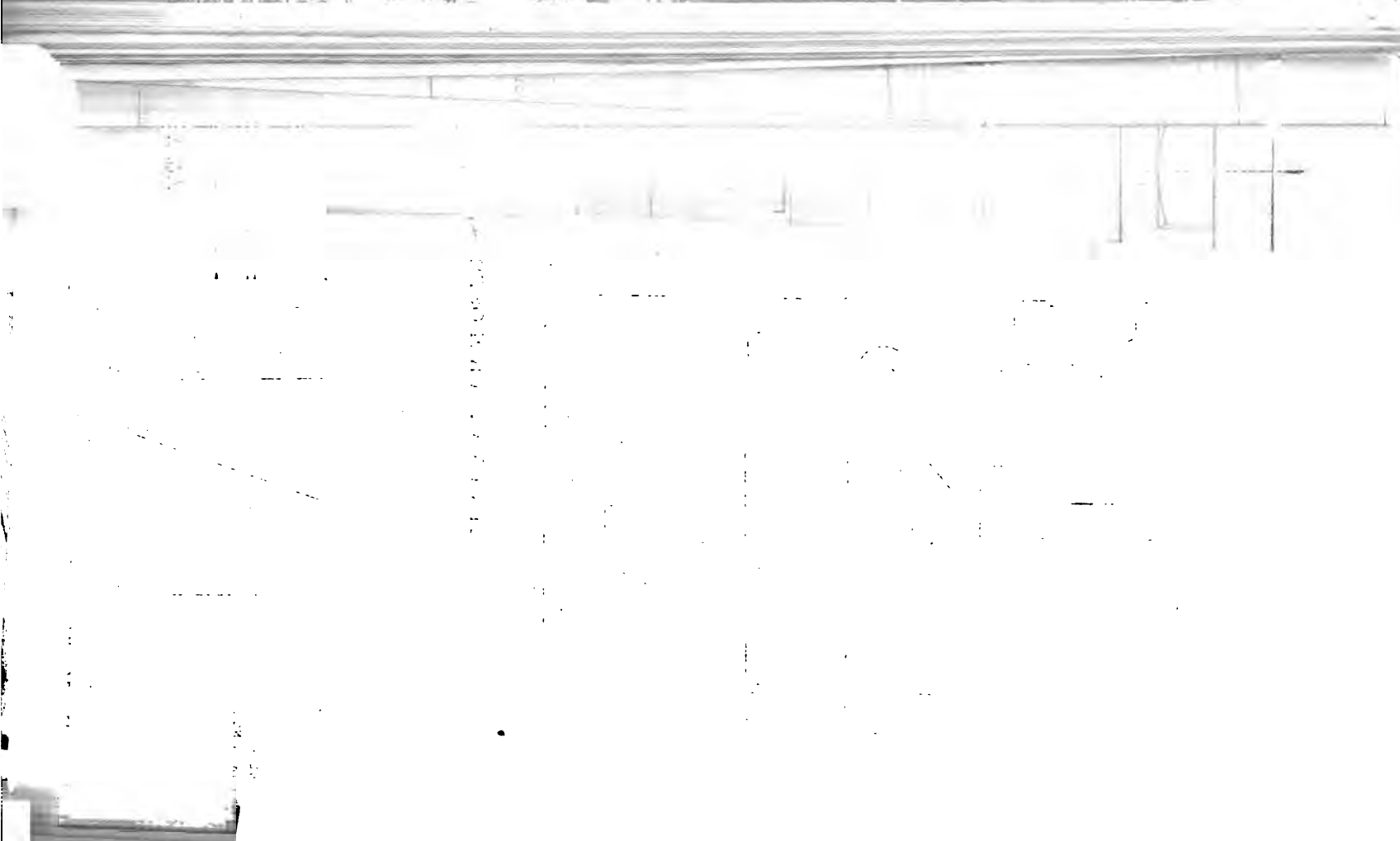


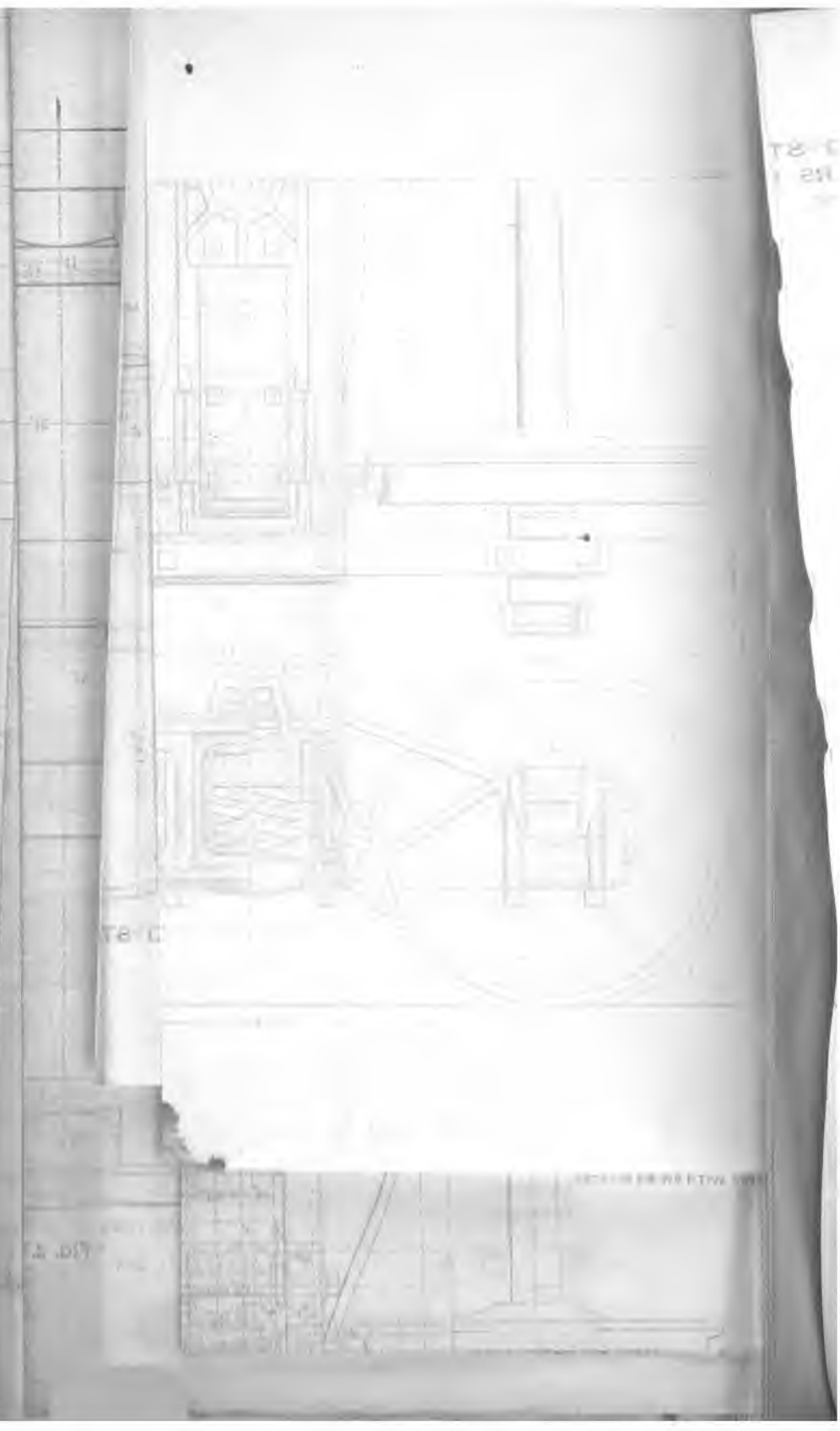












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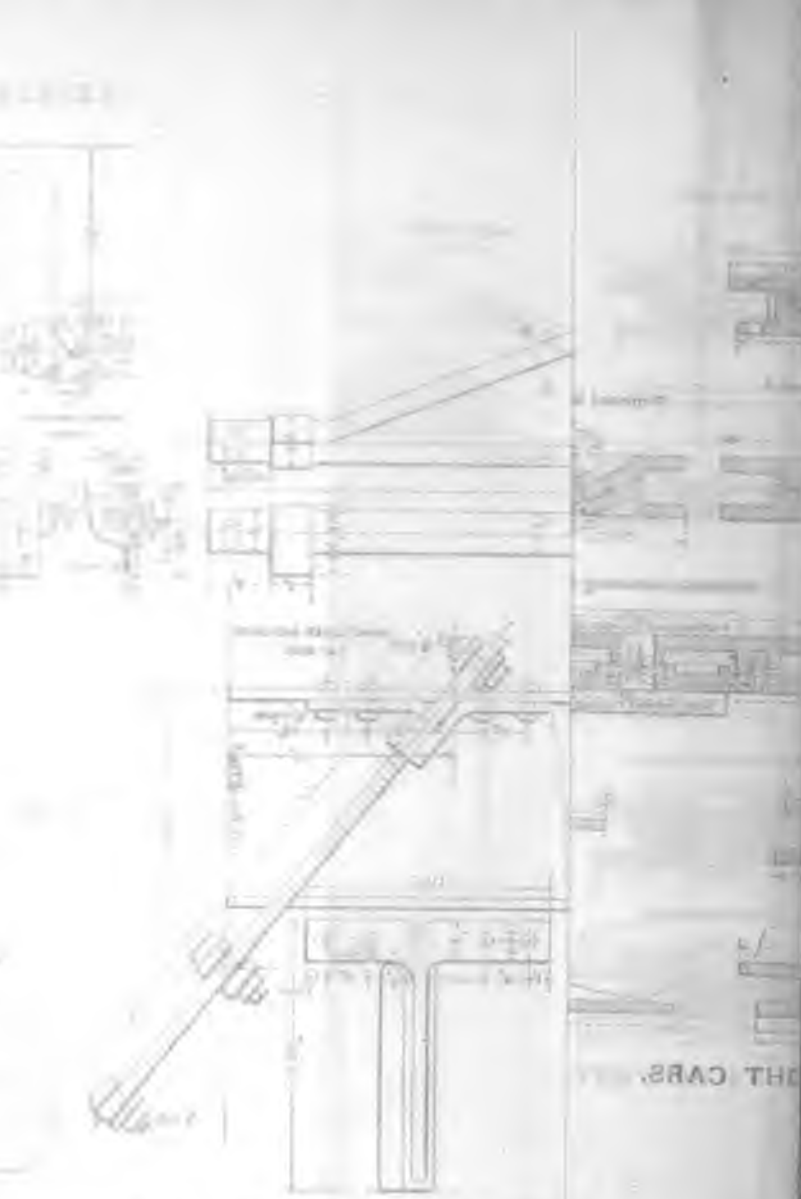
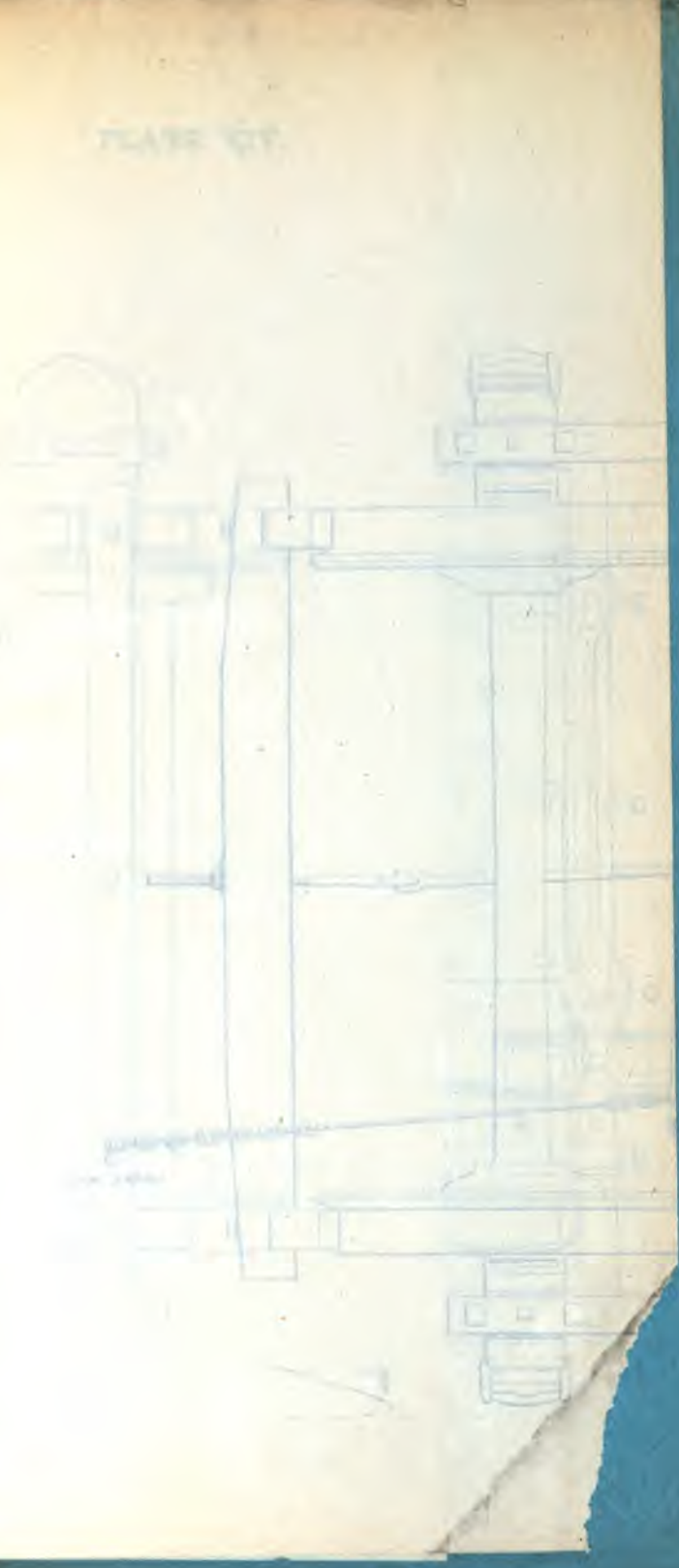


PLATE XII.

CENTRE PLATE FOR PROPOSED STANDARD TRUCK



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